



# MAKING the Difference

Missouri Department of Transportation and  
Highway Patrol Employees' Retirement System  
*A Component Unit of the State of Missouri*

2012

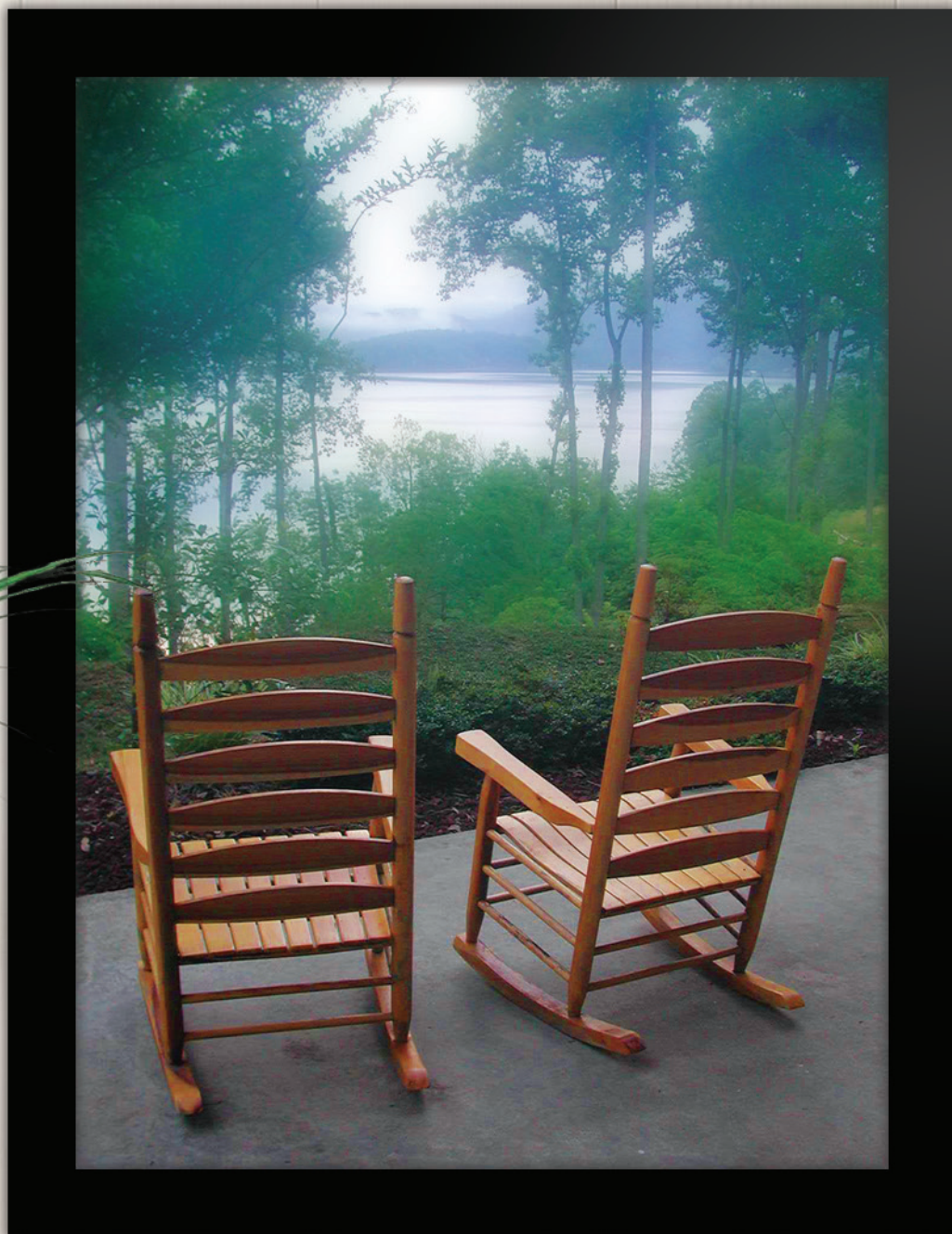
Lifetime pension  
income

Lifetime annual  
COLAs

Stimulates the  
economy

Important source of  
retirement income

Reduces elder  
economic hardships



Scott Simon, Executive Director  
1913 William Street, PO Box 1930  
Jefferson City, MO 65102-1930  
(800) 270-1271, (573) 298-6080

Comprehensive Annual Financial Report  
For the Fiscal Year Ended June 30, 2012

# In Appreciation for the Difference You Made



Susie Dahl retired as Executive Director of the MoDOT & Patrol Employees' Retirement System (MPERS) on September 1, 2012, after 34 years of state service, 19 of which were with a state retirement system.

In 2001, she became the first Assistant Executive Director of MPERS. When Norm Robinson retired in 2008, Susie was named the Executive Director. Susie was instrumental in streamlining numerous operational processes, which made MPERS more efficient and improved customer service. Susie successfully led the completion of a 3-year, multi-phased technology project that included: 1) a new accounting system; 2) an electronic document management system; and 3) a new pension administration system. As part of the new pension system, members have secure online access to their personal information. During the project, the old legacy database was replaced with a new, state-of-the-art, server-based database management system. One of the primary goals of implementing the new technology was to ensure that MPERS has the ability to deliver quality service and benefits in the foreseeable future.

Under Susie's guidance, the Board of Trustees initiated changes to make the most efficient use of Board meeting time and streamline the decision making process. The Board developed a comprehensive set of Board Governance Policies to provide guidance and improve accountability. In addition, the Board

created four standing committees to examine and debate issues, and then prepare a recommendation for the full Board.

Susie believed in providing quality customer service and sound communications. She made numerous presentations around the state regarding the funded status of the System and to build a rapport with the various stakeholders. Through these meetings, she provided a brief history of the System and addressed sustainability concerns by explaining how the Board of Trustees had developed a funding policy to improve MPERS' funded status.

Susie was previously employed as the Manager of Benefit Services for the Missouri State Employees' Retirement System (MOSERS). In that position, she was responsible for coordinating MOSERS' benefit programs, which included retirement, disability, and life insurance. Susie began her career with MOSERS in 1993 as the Executive Assistant to the Director, coordinating legislation and special projects for the System. Before joining MOSERS, Susie worked as the Personnel Director for the Department of Insurance and held human resource positions with several state agencies.

Susie has been an active participant and board member of both national and statewide pension organizations. Most recently, she served on the Executive Committee of the National Association of State Retirement Administrators (NASRA). She is a past president of the National Pension Education Association (NPEA) and the Missouri Association of Public Employee Retirement Systems (MAPERS). At the 2012 MAPERS Conference, Susie was presented with the "MAPERS Public Pension Achievement Award" in recognition of her long-term contribution to Missouri public pensions. She also served as a Trustee for the Jefferson City Fireman's Pension Fund from 1995 to 1998.

Susie's dedication to the retirement industry continues into retirement. She has been selected to serve as the Administrative Officer of the National Association of Public Pension Attorneys (NAPPA). Created in 1987, NAPPA consists exclusively of attorneys who represent public pension funds. Its purpose is to provide educational opportunities and information resources for its member attorneys.

We wish to thank Susie for her years of service and valuable contributions to MPERS. It seems appropriate to dedicate the FY2012 CAFR to Susie because she truly "Made a Difference" in MPERS and the lives of many people. Congratulations on retirement and good luck with new endeavors.



# MoDOT and Patrol Employees' Retirement System



## **Mailing Address**

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## **Street Address**

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## **Phone Numbers**

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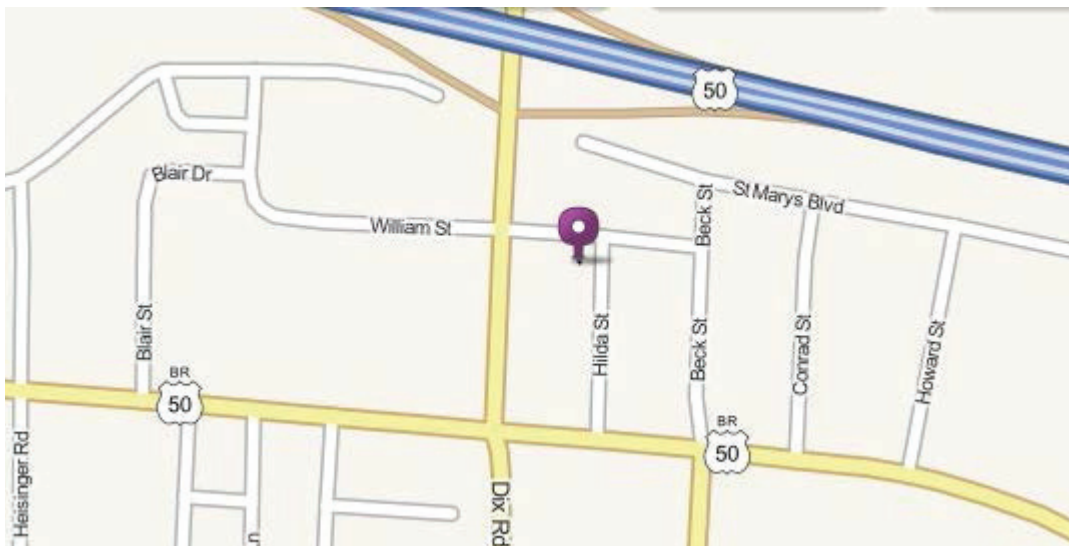
*Benefits*  
(573) 522-6111

## **E-Mail Address**

[mpers@modot.mo.gov](mailto:mpers@modot.mo.gov)

## **WebSite**

[www.mpers.org](http://www.mpers.org)



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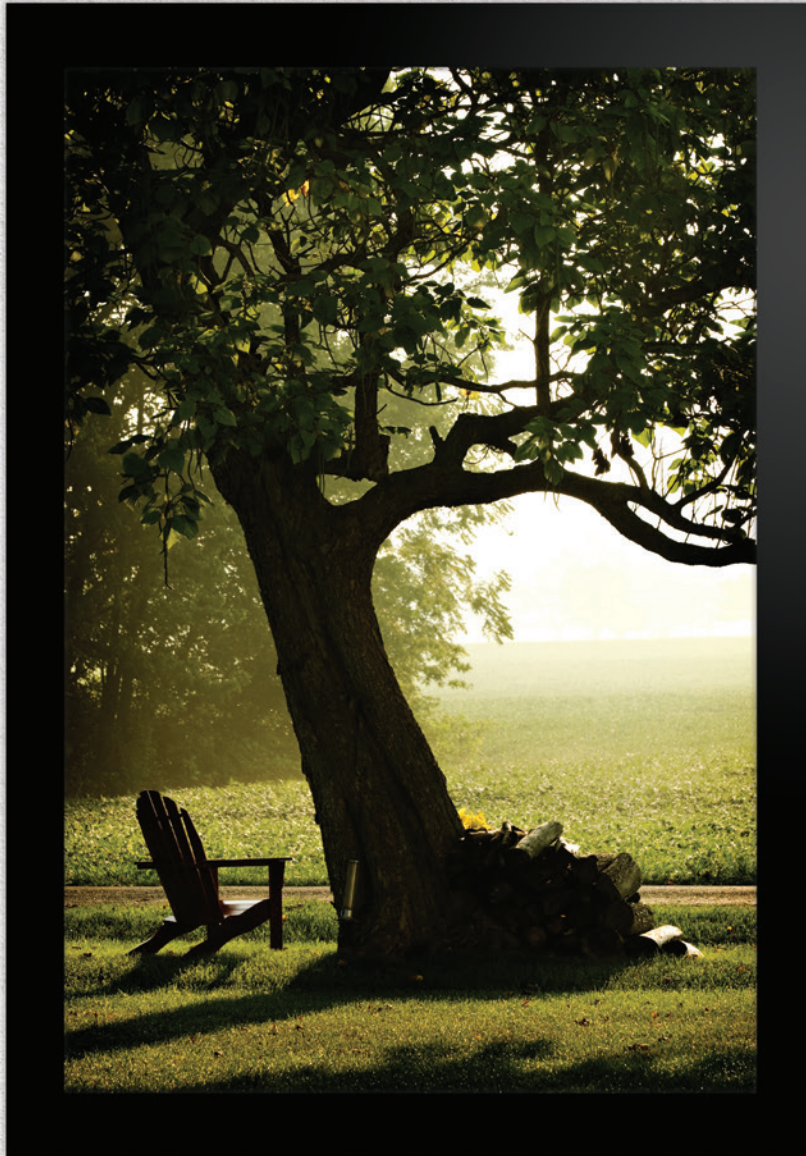
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# Notes





# Lifetime Pension Income



# Certificate of Achievement for Excellence in Financial Reporting

## Certificate of Achievement for Excellence in Financial Reporting

Presented to

Missouri Department of  
Transportation and Highway Patrol  
Employees' Retirement System

For its Comprehensive Annual  
Financial Report  
for the Fiscal Year Ended  
June 30, 2011

A Certificate of Achievement for Excellence in Financial Reporting is presented by the Government Finance Officers Association of the United States and Canada to government units and public employee retirement systems whose comprehensive annual financial reports (CAFRs) achieve the highest standards in government accounting and financial reporting.



*Linda C. Danison*

President

*Jeffrey R. Emer*

Executive Director



# Public Pension Coordinating Council Award



Public Pension Coordinating Council

***Public Pension Standards Award  
For Funding and Administration  
2011***

Presented to

***MoDOT and Highway Patrol  
Employees' Retirement System***

In recognition of meeting professional standards for  
plan funding and administration as  
set forth in the Public Pension Standards.

*Presented by the Public Pension Coordinating Council, a confederation of*

National Association of State Retirement Administrators (NASRA)  
National Conference on Public Employee Retirement Systems (NCPERS)  
National Council on Teacher Retirement (NCTR)

# Letter of Transmittal

Scott Simon  
Executive Director



**MoDOT & Patrol  
Employees' Retirement System**

Pam Henry  
Assistant Executive Director

November 16, 2012

To the Board of Trustees and System Members:

We are pleased to provide this Comprehensive Annual Financial Report (CAFR), of the Missouri Department of Transportation and Highway Patrol Employees' Retirement System (MPERS), for the fiscal year ended June 30, 2012. This report is intended to provide MPERS' stakeholders with a thorough review of the System's operations for the past fiscal year. The material presented in this report has been prepared in a manner intended to be useful and informative to MPERS' members, the management of the Missouri Department of Transportation (MoDOT), the Missouri State Highway Patrol (MSHP), and the elected officials of the State of Missouri.

MPERS is a traditional defined benefit pension plan providing lifetime retirement benefits to eligible MoDOT and MSHP employees. The monthly retirement and survivor benefits provided by MPERS are a valuable source of retirement income for the members we serve. These benefits, when combined with social security, provide the basic foundation for our members to retire with dignity.

The average monthly benefit of a new MPERS retiree is \$1,848, which equates to \$22,176 per year. Given the increasing cost of living, this amount alone will not provide a life of luxury for the retiree. This monthly benefit, however, and those provided by other traditional pension plans, have a significant impact that reaches beyond the retirees served. Over the past 10 years alone, MPERS has paid over \$1.8 billion in benefit payments to its members. Most of these members, retirees and beneficiaries reside in Missouri, reinvesting their retirement dollars in housing, goods, and services. In turn, the local economies benefit from these expenditures, which help to fuel the economy. It is easy to see that defined benefit pensions have a long-term positive impact on our economy and the lives of our members, thus providing the theme for this year's annual report, "Making the Difference".

## **Report Contents and Structure:**

This CAFR is designed to comply with the statutory reporting requirements stipulated in Sections 104.190, 104.1006, and 105.661 of the Revised Statutes of Missouri (RSMo), as amended.

To the best of our knowledge and belief, the information presented is accurate in all material respects and is reported in a manner designed to fairly present the financial position of the fund. Some amounts included in the financial statements and elsewhere may be based on estimates and judgments. These estimates and judgments were products of the best business practices available. The accounting policies followed in preparing the basic financial statements conform with U.S. generally accepted accounting principles. Financial information presented throughout the CAFR is consistent with information displayed in the basic financial statements.

The MPERS Board of Trustees is ultimately responsible for the CAFR and the basic financial statements. MPERS' Executive Director and staff prepare the information contained in the CAFR and the financial statements to assist the Board in fulfilling their statutory duty.

Systems of internal controls and supporting procedures are maintained to provide assurances that transactions are authorized, assets are safeguarded, and proper records are maintained. These controls include standards in the hiring and training of employees, the establishment of an organizational structure, and the communication of policies and guidelines throughout the organization. Inherent limitations exist in all control systems. No evaluation of controls can provide absolute assurance that misstatements due to error or fraud will not occur or that all control issues and instances of fraud have been detected.

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**Website:** [www.mpers.org](http://www.mpers.org) • **E-Mail:** [mpers@modot.mo.gov](mailto:mpers@modot.mo.gov)



# Letter of Transmittal

In accordance with Section 104.190, RSMo, as amended, an independent auditing firm, Williams-Keepers, LLC, has audited the financial statements included in this report and has issued an unqualified opinion (meaning no audit findings on MPERS' financial statements). Their opinion letter is presented in the Financial Section of this CAFR. Management's Discussion and Analysis (MD & A) immediately follows the Independent Auditors' Report and provides a narrative introduction, overview, and analysis of the basic financial statements. Management's Discussion and Analysis complements this letter of transmittal.

## **Background Information:**

MPERS was established by Senate Bill 66. Under this legislation, employees of MoDOT and the Highway Patrol became members of the retirement system on September 1, 1955. Effective October 1, 1955, the System accepted 109 retirements.

The plan provisions have changed many times over the years. The System offers not only enhanced retirement and disability benefits, but also benefits for survivors of active and retired members, benefits for qualified terminated-vested members, and death benefits. Beginning January 1, 2011, new employees hired for the first time in a benefit eligible position are required to contribute 4% of pay to help fund the cost of their MPERS benefits.

An eleven-member Board of Trustees is responsible for the oversight of MPERS. The Trustees serve as fiduciaries to the members and are responsible for selecting and retaining competent management. The Trustees and management jointly establish sound policies and objectives, and monitor operations for compliance and oversee performance.

As an instrumentality of the state, MPERS is considered a component unit of the State of Missouri for financial reporting purposes and, as such, the financial statements in this report are also included in the State of Missouri's Comprehensive Annual Financial Report.

## **Fiscal Year 2012 Highlights:**

For the first time, MPERS participated in the Pension Administration Benchmarking Survey, conducted by Cost Effective Measurement (CEM). CEM has a long history of providing public and private systems with insights into their administration costs and service levels. The report serves as a "report card" that rates MPERS in various categories in relation to other pension funds in our peer universe. The CEM philosophy is derived from the premise "what gets measured, gets managed".

More than 80 pension systems worldwide participate in CEM's Pension Administration Benchmarking Service. Several years ago, CEM developed a survey for smaller systems, such as MPERS. This year, the peer group consisted of eight other systems ranging in size from 7,500 members to 64,000 members. Two of the key findings in the report are as follows:

- MPERS' total service score was 80 out of 100, which is above the peer average of 72. Service is defined as "anything a member would like, before considering costs". Generally speaking, this means faster is better, and more services and availability are better. MPERS' total service score of 80 was the second highest in the peer group.
- Our pension administration cost was \$143 per active member and annuitant. That is \$157 below the peer average of \$300. MPERS' cost was the second lowest in the peer group.

MPERS also participated in the "Retirement Process Satisfaction Assessment", a benchmarking tool administered by Cobalt Community Research. The assessment was sent to new retirees to measure their satisfaction in our service, staff, website, and the process itself as it relates to applying for retirement. The results of this assessment demonstrated favorable ratings from our members and competitive results when compared to other retirement systems.

An actuarial firm (Cheiron) was hired to conduct a full valuation replication of the FY2011 valuation prepared by our current actuary, Gabriel Roeder Smith and Company. During the audit, Cheiron duplicated the FY2011 actuarial valuation, verified the demographic data, and reviewed the assumptions and methodologies used by our current actuary. Assuring a proper valuation of plan liabilities is a significant "risk reducer" since an undervaluation of liabilities can lead to serious underfunding of a plan and misreporting of a plan's funded status. The generally acceptable tolerance when one actuarial firm audits another firm is plus/minus 5%. The results of Cheiron's audit were within the acceptable guidelines and not significantly different from our FY2011 valuation.

During the 2012 Legislative Session, SB 625 was signed into law. The bill provides clarification regarding the transfer of reciprocal service funds between MPERS and the Missouri State Employees' Retirement System (MOSERS) that was not anticipated when HB 282 passed in 2011.

SB 625 also modifies the annual interest rate paid on employee contributions for members of the 2011 Tier, effective June 30, 2014, and thereafter. Instead of a flat 4% annually, the interest crediting rate shall be equal to the investment rate that is published by the U.S. Department of Treasury for 52-week Treasury bills for the relevant auction that is nearest to the preceding July first.

# Letter of Transmittal

## **Actuarial Funding Status:**

The funding objective of MPERS is to meet future benefit obligations of retirees and beneficiaries through contributions and investment earnings. All funding from MoDOT and approximately 90% of funding from the MSHP come from the State Highway and Transportation Fund. The remaining 10% of funding for the MSHP comes from other revenue sources. Although Missouri, like most of the country, is facing tough economic times, our employers continue to provide the contributions required to appropriately fund the System.

During the year ended June 30, 2012, the funded ratio of MPERS, which covers 17,538 participants, increased from 43.3% to 46.3%. System assets earned a 2.8% return on a market basis, although the fund recognized an 11.5% rate of return on an actuarial basis after accounting for the smoothing of this year's loss, relative to our assumed rate of return, and the prior year's gains. Overall, there was an experience gain of \$107 million. This gain was made up of a \$45 million investment gain and a \$62 million liability gain.

Each year an independent actuarial firm conducts an annual valuation to determine the actuarial soundness of the Plan, based on its long-term obligations and the sufficiency of current contribution levels to fund the liabilities over a reasonable time frame. In our most recent valuation, dated June 30, 2012, our actuary concluded that the System continues to be financed in accordance with actuarial principles of level percent of payroll financing. This statement is based upon the fact that the employers are contributing to the System based upon actuarially determined rates and presumes a continuation of payment of actuarially determined contributions. Additional information regarding the financial condition of the System can be found in the Actuarial Section of this report.

In an effort to address the System's underfunding situation, in September 2006, the Board of Trustees adopted a permanent funding policy that was intended to improve MPERS' funded status over time.

The permanent funding policy provided:

- The total contribution is based on the Plan's normal cost plus a 29-year amortization period for MPERS' unfunded liabilities. The financing period is a closed period starting July 1, 2007.

On September 17, 2009, after the market downturn, the Board of Trustees adopted the following temporary accelerated funding policy:

- The total contribution is based on the Plan's normal cost plus a 15-year amortization period for unfunded retiree liabilities and a 30-year amortization period for other unfunded liabilities. Both amortization periods are closed periods starting July 1, 2010.
- The temporary accelerated policy will remain in effect until such time as the retiree liability becomes 100% funded or the permanent policy produces a higher contribution rate.
- As of June 30, 2012, the permanent policy is at a closed amortization period of 23 years and the temporary accelerated policy is at a closed amortization period of 12 years for unfunded retiree liabilities and 27 years for other unfunded liabilities.

## **Investment Activities:**

State statutes require the System to make investments using the same care, skill, and diligence that a prudent person acting in a similar capacity would use. In fulfilling this obligation, the Board of Trustees has established a formal investment policy to clearly define the roles and responsibilities of the Board, staff and consultants, and to ensure that System assets are invested in a diversified portfolio following prudent investment standards. The Board of Trustees determines the broad asset allocation policies and return objectives of the Plan. To implement and execute these policies, the Board retains investment staff, consultants, a master custodian and other advisors.

As of June 30, 2012, MPERS' investment portfolio had a total market value of \$1.528 billion representing a return of 2.75% for the fiscal year. The portfolio continues to perform very well versus the peer universe for periods out to three years. The three-year performance of 12.20% ranks in the top 29% of the peer universe. The one-year return of 2.75% ranks in the top 20% of the universe.

## **Awards:**

The Government Finance Officer Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to MPERS for its FY2011 CAFR. This was the seventh consecutive year that MPERS has achieved this prestigious award. The Certificate of Achievement is the highest form of recognition for



# Letter of Transmittal

excellence in state and local government financial reporting. To be awarded a Certificate of Achievement, a government must publish an easily readable and efficiently organized CAFR. This report must satisfy both generally accepted accounting principles and applicable legal requirements.

A Certificate of Achievement is valid for a period of one year. We believe that our current CAFR continues to meet the program's requirements, and therefore, we are submitting this report to GFOA to determine its eligibility for another certificate.

MPERS also received the Public Pension Coordinating Council (PPCC), Public Pension Standards Award, in recognition of meeting professional standards for plan design and administration. This is the eighth consecutive year MPERS received the council's award. This award is presented by the PPCC, a confederation of the National Association of State Retirement Administrators (NASRA), the National Conference on Public Employee Retirement Systems (NCPERS) and the National Council on Teacher Retirement (NCTR).

## **Acknowledgements and Distribution:**

This report, prepared by the MPERS' Executive Director and staff, is intended to provide comprehensive and reliable information about the System, to demonstrate compliance with legal provisions, and to allow for the evaluation of responsible stewardship of the System's funds.

Copies of this report are provided to the Governor, the State Auditor, and the Joint Committee on Public Employee Retirement. It is also distributed to all MoDOT divisions, district offices, MSHP general headquarters, and troop headquarters. These offices form the link between MPERS and its members, and their cooperation contributes significantly to the success of MPERS.

We hope all readers of this report find it informative and useful. Additional copies will be furnished upon request. An electronic version of this report is available on the MPERS website at [www.mpers.org](http://www.mpers.org).

We express our gratitude to the members of the Board, the staff, the consultants, and the many people who have worked so diligently to assure the continued successful operation of MPERS. The steady, monthly benefit payments offered by defined benefit plans, like MPERS, provide peace of mind and security for retirees and their families. At the same time, the national and local economies benefit from the regular expenditures of retirees. MPERS is committed to "Making the Difference" by providing a foundation for financial security to plan participants through the delivery of quality benefits, exceptional member service, and professional plan administration.

Respectfully submitted,



Scott Simon  
Executive Director



Major J. Bret Johnson  
Board Chairman

# Board of Trustees

MPERS is governed by a Board of Trustees. As set out in Section 104.160 of the Revised Statutes of Missouri (RSMo), the Board is comprised of eleven members:



**Major J. Bret Johnson**  
Board Chair  
MSHP Employees'  
Representative  
Elected by MSHP Employees  
Term Expires 7-1-2014



**Lloyd "Joe" Carmichael**  
Board Vice Chair  
Commission Member  
Highways & Transportation  
Commissioner  
Term Expires 3-1-2015



**Rudolph E. Farber**  
Commission Member  
Highways & Transportation  
Commissioner  
Term Expires 3-1-2013



**Sue Feltrop**  
MoDOT Employees'  
Representative  
Elected by MoDOT Employees  
Term Expires 7-1-2014



**Senator Mike Kehoe**  
State Senator  
District 6  
Appointed by  
President Pro-Tem of the Senate



**Kevin Keith**  
Director of the Missouri  
Department of  
Transportation  
Ex-Officio Member



**Representative  
Don Phillips**  
State Representative  
District 62  
Appointed by  
Speaker of the House



**Colonel Ron Replogle**  
Superintendent of the  
Missouri State  
Highway Patrol  
Ex-Officio Member



**Bob Sfreddo**  
MoDOT Retiree  
Representative  
Elected by Retired  
Members of MoDOT  
Term Expires 7-1-2014



**Roger Stottlemire**  
MSHP Retiree Representative  
Elected by Retired  
Members of MSHP  
Term expires 7-1-2014



**Kenneth H. Suelthaus**  
Commission Member  
Highways & Transportation  
Commissioner  
Term Expires 3-1-2015



# Administrative Organization



---

**Scott Simon – Executive Director**

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Omar Davis – General Counsel

Jennifer Even – Chief Financial Officer

Lois Wankum – Executive Assistant II

Barbara Graessle – Administrative Assistant I



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**Pam Henry – Assistant Executive Director**

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Mariel Hale – Senior Benefit Specialist

Mary Jordan – Senior Benefit Specialist

Bev Wilson – Benefit Audit Specialist

Angel Backes – Senior Account Technician

Tammy Kroll – Intermediate Account Technician

Leigh Love – Administrative Assistant II



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**Larry Krummen, CFA – Chief Investment Officer**

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Jennifer Johnson – Senior Investment Officer

Tinisha Eickhoff – Investment Analyst

Our Mission is to provide a foundation for financial security to plan participants by delivering quality benefits and exceptional member service through professional plan administration and prudent management of assets, at a reasonable cost to the taxpayers of Missouri.

# Administrative Organization

## **Director's Office**

The Director's Office staff provides administrative oversight and support in the areas of legislation, operations, benefits, and investments.

## **Financial Services**

The Financial Services section is responsible for maintaining all the financial records of MPERS. The chief financial officer (accountant) interacts with the investment custodian, the auditors, the depository bank, Missouri's Department of Revenue, and the Internal Revenue Service. In addition, the accountant assists the chief investment officer in tracking and predicting target cash balances, participates in annual budget development, prepares monthly budget-to-actual reports, and calculates monthly premium payments to the long-term disability insurer. The accountant also processes MPERS' semi-monthly office payrolls, reconciles monthly benefit payments and contributions/payrolls posted, and reconciles investment activity.

## **Investments**

The Investments section works closely with the general investment consultant to oversee the investment portfolio and provide consulting services to the Board and the executive director. This includes, but is not limited to: (a) formulating investment policy and asset recommendations, (b) providing recommendations on the selection, (c) monitoring and evaluating external investment advisors, (d) measuring and reporting on investment performance, (e) conducting market research on political, financial, and economic developments that may affect the System, and (f) serving as a liaison to the investment community.

## **Legal Services**

The Legal Services section advises the executive director and Board on legal matters, reviews and approves investment and other contracts for MPERS, advises staff on the application of state and federal statutes affecting the administration of plan benefits, responds to requests from members and their attorneys related to plan benefits, engages in or oversees litigation affecting MPERS, and assists in developing policies, rules, and legislation impacting MPERS' operations and the administration of plan benefits.

## **Member Services**

The Member Services section consists of two units devoted to serving member needs.

The Benefits unit is responsible for contact with the membership regarding the benefit programs administered by MPERS, which include retirement and disability. The benefits staff is responsible for preparing and delivering the pre-retirement and benefit basics seminars in addition to assisting with the development of member communication material.

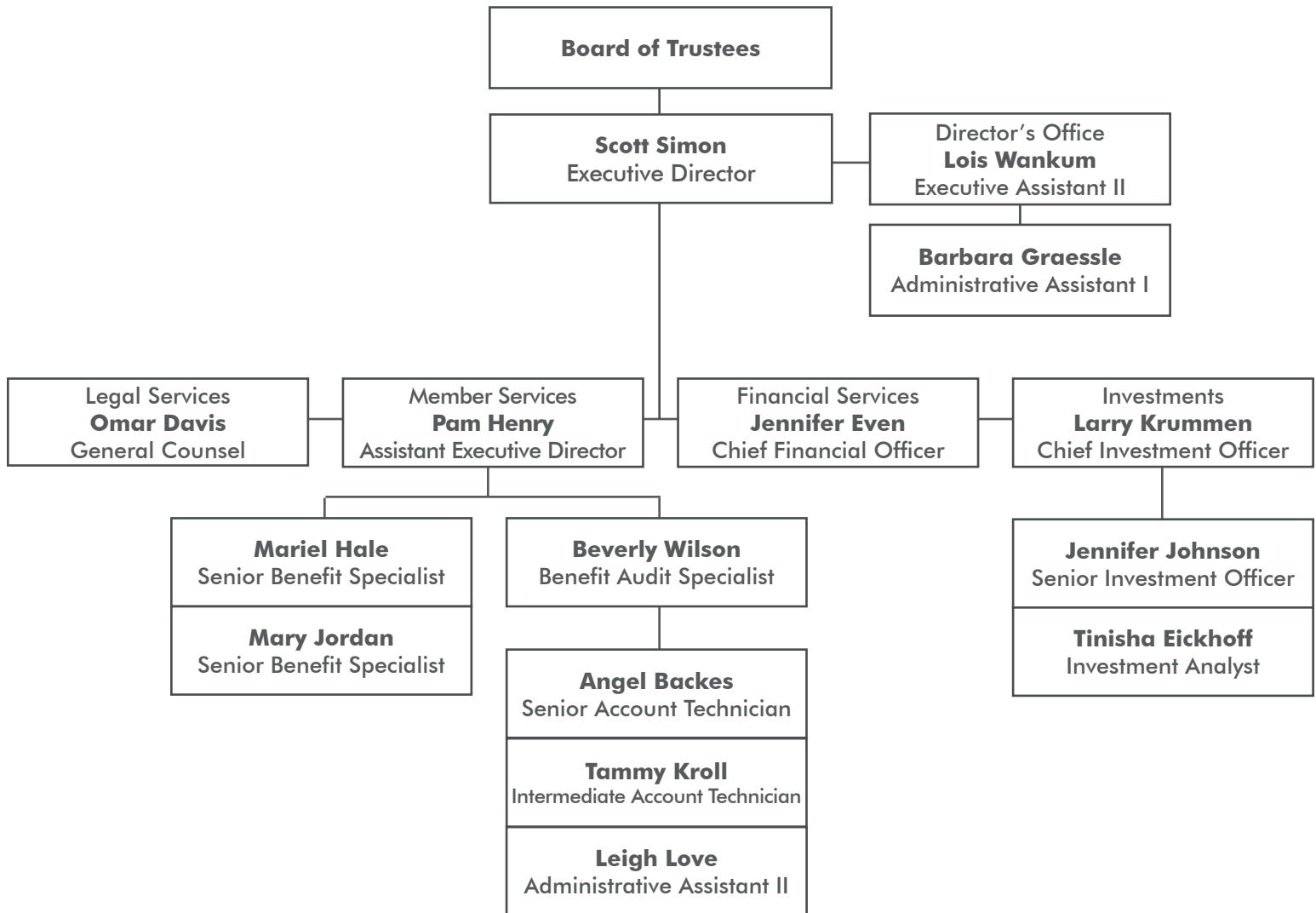
The Payroll unit is responsible for establishing and maintaining all membership records including:

- (a) maintaining member data on the pension administration system
- (b) verifying retirement calculations,
- (c) balancing payroll deductions,
- (d) verifying SAM II data against exception reports, and
- (e) entering payroll, service, and leave data into the System's computerized database.



# Administrative Organization

The executive director of MPERS has charge of the offices and records of the System and hires such employees deemed necessary, subject to the approval of the Board of Trustees. The System employs fifteen full-time staff.



# Professional Services

The following firms were retained at fiscal year-end by the Board of Trustees to serve in professional capacities or provide consultant services. Please refer to pages 37 and 38 in the Investment Section for the Schedule of Investment Expenses and Brokerage Commissions for the investment professionals.

## **Actuary**

Gabriel, Roeder, Smith & Company  
Southfield, Michigan

## **Legislative Consultant**

Michael G. Winter Consultants, LLC  
Jefferson City, Missouri

## **Auditor**

Williams-Keepers, LLC  
Jefferson City, Missouri

## **Master Trustee/Custodian**

The Northern Trust Company  
Chicago, Illinois

## **Investment Consultant**

New England Pension  
Consultants (NEPC)  
Cambridge, Massachusetts

## **Risk Management/Insurance Consultant**

Charlesworth Benefits  
Overland Park, Kansas

## **Governance Consultant**

Cortex Applied Research Inc.  
Toronto Ontario

## **Long-Term Disability Insurer**

The Standard Insurance Company  
Portland, Oregon

# Professional Services

## Investment Managers

Aberdeen Asset Management.....	Philadelphia, Pennsylvania
ABRY Partners .....	Boston, Massachusetts
Acadian Asset Management .....	Boston, Massachusetts
AEW Partners .....	Boston, Massachusetts
Albourne America .....	San Francisco, California
American Infrastructure MLP.....	Foster City, California
Anchorage Capital Group .....	New York, New York
Apollo Real Estate .....	New York, New York
AQR Capital Management.....	Greenwich, Connecticut
Artio Global Investors.....	New York, New York
Audax Group .....	Boston, Massachusetts
Barclays Global Investors.....	San Francisco, California
BlueCrest Capital Management .....	St. Peter Port, Guernsey
Brevar Howard .....	New York, New York
Bridgewater Associates.....	Westport, Connecticut
CBRE Investors .....	Baltimore, Maryland
Cevian Capital Limited .....	Jersey, Channel Islands
Colony Capital .....	Los Angeles, California
Concordia.....	New York, New York
CarVal Investors (CVI).....	Minnetonka, Minnesota
Deephaven Capital Management .....	Minnetonka, Minnesota
EIF Management .....	Needham, Massachusetts
Enhanced Investment Technologies (INTECH).....	Palm Beach Gardens, Florida
Golub Capital .....	New York, New York
Grove Street Advisors .....	Wellesley, Massachusetts
GSO Capital Partners .....	New York, New York
ING Clarion .....	New York, New York
Luxor Capital .....	New York, New York
Natural Gas Partners.....	Houston, Texas
Energy & Mineral Group .....	Houston, Texas
Och-Ziff Real Estate.....	New York, New York
Ospraie Management .....	New York, New York
Partner Fund Management .....	San Francisco, California
Pinnacle Associates .....	New York, New York
Principal Global Investors .....	Des Moines, Iowa
RMK Timberland.....	Winston-Salem, North Carolina
Rothschild Asset Management .....	New York, New York
Silchester International Investors Limited.....	New York, New York
Stark Investments (Shepherd).....	Milwaukee, Wisconsin
Stelliam Investment Management .....	New York, New York
Structured Portfolio Management (SPM) .....	Stamford, Connecticut
Taconic Capital Advisors .....	New York, New York
The Clifton Group .....	Edina, Minnesota
The Northern Trust Company.....	Chicago, Illinois
Tortoise Capital Advisors .....	Leawood, Kansas
Urdang Real Estate Investment Advisors .....	Plymouth Meeting, Pennsylvania
ValueAct Capital .....	San Francisco, California
Vectis Healthcare .....	Boston, Massachusetts
Vicis Capital.....	New York, New York
WS Capital Management.....	Dallas, Texas
Western Asset Management Company.....	Pasadena, California

# Notes





## Lifetime Annual Cost-of-Living Adjustments



# Independent Auditors' Report



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## INDEPENDENT AUDITORS' REPORT

The Board of Trustees  
Missouri Department of Transportation and  
Highway Patrol Employees' Retirement System

We have audited the accompanying statements of plan net assets of the Missouri Department of Transportation and Highway Patrol Employees' Retirement System (the System) as of June 30, 2012 and 2011, and the related statements of changes in plan net assets for the years then ended. These financial statements are the responsibility of the System's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with U.S. generally accepted auditing standards. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the plan net assets of the System at June 30, 2012 and 2011, and the respective changes in plan net assets for the years then ended, in conformity with U.S. generally accepted accounting principles.

U.S. generally accounting principles require that the management's discussion and analysis on pages 2 through 5 and the schedules of funding progress and employer contributions on pages 23 and 24 be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with U.S. generally accepted auditing standards, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audits of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Our audits were conducted for the purpose of forming opinions on the financial statements that collectively comprise the System's financial statements as a whole. The additional financial information on pages 25 through 27 is presented for purposes of additional analysis and is not a required part of the financial statements. The additional information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the financial statements. The additional information has been subjected to the auditing procedures applied in the audit of the financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements or to the financial statements themselves, and other additional procedures in accordance with U.S. generally accepted auditing standards. In our opinion, the additional information is fairly stated in all material respects in relation to the financial statements as a whole.

The Introductory, Investment, Actuarial, and Statistical Sections have not been subjected to the auditing procedures applied in the audits of the basic financial statements and, accordingly, we express no opinion on them.

November 20, 2012

American Institute of Certified Public Accountants  
Missouri Society of Certified Public Accountants  
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Superior service. Creative solutions. Exceptional clients.

# Management's Discussion and Analysis

The management of the Missouri Department of Transportation and Highway Patrol Employees' Retirement System (the System, or MPERS) provides this discussion and analysis of the System's financial performance for the fiscal years ended June 30, 2012 and 2011. While this discussion is intended to summarize the financial status of MPERS, readers should consider this information in conjunction with the information that is furnished in the more detailed financial statements and corresponding notes.

## DESCRIPTION OF BASIC FINANCIAL STATEMENTS

As required by the Governmental Accounting Standards Board (GASB) accounting standards, this financial report consists of Management's Discussion and Analysis (this section), the basic financial statements (including notes to the basic financial statements), and other required supplementary information.

**Financial Statements** report information about MPERS, using accounting methods similar to those used by private-sector companies, by using the economic resources measurement focus and accrual basis of accounting. These statements provide both long-term and short-term information about the System's overall financial status. These statements follow this Management's Discussion and Analysis section:

- The **Statement of Plan Net Assets** includes all the System's assets and liabilities, with the difference between the two reported as net assets.
- The **Statement of Changes in Plan Net Assets** accounts for all the current year's additions (income) and deductions (expenses), regardless of when cash is received or paid.

**Notes to the Financial Statements** are included following the financial statements. The notes to the financial statements provide additional information that is essential for a full understanding of the data provided in the financial statements.

**Required Supplementary Information** follows the notes and further supports the information in the financial statements.

## ANALYSIS OF FINANCIAL POSITION AND RESULTS OF OPERATIONS

Overall, the financial position of MPERS weakened by \$14 million, reported as the "change in net assets." This is primarily a result of the combination of lower than expected investment returns, an increase in benefit payments, and a slight decrease in contributions for the year ended June 30, 2012. The investment gains were not enough to cover the gap between benefit payments and contributions, thus resulting in a net decrease. Even with this net decrease in value in FY12, the funded status of the plan showed an increase of 3.03%, primarily due to actuarial gains.

The following schedules present summarized comparative data from the System's financial statements for the fiscal years ended June 30, 2012, 2011, and 2010. Following each schedule is a brief summary providing explanation and analyses of the major reasons for changes in the condensed financial statements.

# Management's Discussion and Analysis

## Summarized Comparative Statements of Plan Net Assets

	As of June 30, 2012	As of June 30, 2011	As of June 30, 2010	% Change 2012/2011	% Change 2011/2010
Cash and Receivables	\$ 17,123,877	\$ 37,735,045	\$ 90,675,162	-55%	-58%
Investments	1,533,375,977	1,548,229,721	1,299,366,338	-1%	19%
Invested Securities					
Lending Collateral	57,498,405	60,133,588	44,655,544	-4%	35%
Capital Assets	2,914,845	3,287,289	3,276,526	-11%	0%
Other Assets	5,448	6,794	5,155	-20%	32%
Total Assets	1,610,918,552	1,649,392,437	1,437,978,725	-2%	15%
Accounts Payable	11,356,972	32,898,778	78,491,744	-65%	-58%
OPEB Obligation	459,906	364,124	276,548	26%	32%
Securities Lending Collateral	57,698,128	60,339,959	45,986,723	-4%	31%
Long-Term Debt/Payable	0	108,900	506,400	-100%	-78%
Total Liabilities	69,515,006	93,711,761	125,261,415	-26%	-25%
<b>Total Net Assets</b>	<b>\$1,541,403,546</b>	<b>\$1,555,680,676</b>	<b>\$1,312,717,310</b>	<b>-1%</b>	<b>19%</b>

The decrease in cash and receivables is primarily attributable to lower investment sales receivables as of June 30, 2012. Some fluctuations in this area are normal, based on investment activity. The decrease from FY10 to FY11 is also primarily attributable to lower investment sales receivables. The System was restructuring its investment portfolio to meet new target allocations, resulting in the higher receivable amount as of June 30, 2010.

The System's investments represent the main component of total assets. These investments include holdings of stock, government-sponsored enterprises, bonds, mortgages, real estate, timber, securities lending collateral, limited partnerships, and other fixed income investments. The decrease of investments from FY11 to FY12 is due to lower than expected investment returns, resulting in an outflow of cash to fund benefit payments that was larger than inflows generated by investment returns. The increase in fair value from FY10 to FY11 is due to very favorable market conditions experienced in FY11. Detailed information regarding MPERS' investment portfolio is included in the *Investment Section* of this report.

Capital assets decreased in FY12, due to depreciation of existing assets and only minimal purchases of new equipment during the year. The slight increase in capital assets from FY10 to FY11 can be attributed to the completion of all phases of the technology project MPERS began implementing in FY10. Costs associated with the project have been capitalized and the entire project has been fully implemented and is now depreciable.

The largest component of liabilities is securities lending collateral. This represents the amount owed for collateral to be returned as the result of securities lent. The decrease in securities lending collateral from FY11 to FY12 is due to the decrease in the fair value of investments. The increase in securities lending collateral from FY10 to FY11 is due to the increase in the fair value of investments. The corresponding securities lending collateral asset is valued at lower amounts at June 30, 2012, 2011 and 2010 due to the market value of the securities on loan being less than the par value.

The decrease in accounts payable for FY12 and FY11 is primarily attributable to lower investment purchases payable. Some fluctuations in this area are normal, based on investment activity.

The decrease in long-term debt/payable for FY12 and FY11 reflects the reduction in the obligation for the technology project, as installment payments became due.

The OPEB obligation of \$459,906 at June 30, 2012, \$364,124 at June 30, 2011, and \$276,548 at June 30, 2010, represents a liability recorded pursuant to GASB Statement No. 45, which was implemented in FY08. This liability reflects the System's provision of post-employment health care benefits through its participation in the MoDOT and



# Management's Discussion and Analysis

MSHP Medical and Life Insurance Plan. As allowed by the GASB, this reporting requirement is being implemented prospectively, as prior years' data is not available. This plan is an internal service fund of MoDOT; therefore, assets have not been set aside. With this, the increases from FY11 to FY12 and from FY10 to FY11 are expected.

The System's combined net assets were \$1.541 billion at June 30, 2012, a \$14 million decrease from the \$1.556 billion at June 30, 2011. This is a slight offset to the increase of the previous year, when assets increased \$243 million from the June 30, 2010 amount of \$1.313 billion to the June 30, 2011 amount of \$1.556 billion.

## ***Summarized Comparative Statements of Changes in Plan Net Assets***

	<b>Year Ended June 30, 2012</b>	<b>Year Ended June 30, 2011</b>	<b>Year Ended June 30, 2010</b>	<b>% Change 2012/2011</b>	<b>% Change 2011/2010</b>
Contributions	\$ 166,256,835	\$ 168,130,790	\$ 124,476,706	-1%	35%
Net Investment Income	2,091,564	279,612,052	166,307,054	-85%	68%
Other Income	13,760	33,141	33,145	-58%	0%
Net Additions	208,362,159	447,775,983	290,816,905	-53%	54%
Benefits	219,704,320	202,153,768	196,721,274	9%	3%
Administrative Expenses	2,934,969	2,658,849	2,512,181	10%	6%
Total Deductions	222,639,289	204,812,617	199,233,455	9%	3%
Change in Net Assets	(14,277,130)	242,963,366	91,583,450	-106%	165%
Net Assets-Beginning	1,555,680,676	1,312,717,310	1,221,133,860	19%	7%
Net Assets-Ending	<b>\$1,541,403,546</b>	<b>\$1,555,680,676</b>	<b>\$1,312,717,310</b>	<b>-1%</b>	<b>19%</b>

The main component of the changes in contributions to MPERS is employer contributions. In FY12 contributions decreased slightly despite an increase in contribution rates from the prior year for all active members. This was due to a large one time transfer in during FY11. In FY11, MPERS received a transfer of contributions from MOSERS in the amount of \$17,609,276, for Water Patrol member's service transferred. Also for FY11, the contribution rates increased for all active members from the FY10 rates, therefore increasing the FY11 amount of employer contributions from the FY10 amount.

Net investment income, a primary component of plan additions, resulted in income of \$42 million for FY12. The income represented a 2.75% return for the fiscal year ended June 30, 2012. In comparison, the FY11 gain of \$280 million represented an investment return of 21.8%, which outperformed the policy benchmark by 5.1%. Annual fluctuations within the broad investment markets are outside of the control of the System and are expected to fluctuate from year to year. The Board of Trustees has approved a diversified asset allocation that, over time, is expected to realize the assumed actuarial rate of investment return of 8.25%. Additional information regarding investments can be found in the *Investment Section* of this report.

Benefits increased primarily due to increases in benefit rolls for all of the years shown. Detailed schedules of changes can be found in the *Actuarial Section* of this report.

# Management's Discussion and Analysis

## CURRENTLY KNOWN FACTS AND RECENT EVENTS

Based on the June 30, 2011 actuarial valuation, the Board of Trustees approved an increase in the required state contribution, effective July 1, 2012. The rate applied to non-uniformed payroll (MoDOT, civilian patrol, and MPERS) will increase from 45.45% to 50.92%. The rate applied to uniformed patrol payroll will decrease from 58.63% to 55.03%. The increase in the non-uniformed rate is due to the decrease in number of employees by MoDOT, thus causing a significant decrease in covered payroll dollars. The decrease in the uniformed patrol rate is due to the increase in number of employees from the transfer in of Water Patrol employees, as well as the transfer in of funds from MOSERS for their liability.

Based on the June 30, 2012 actuarial valuation, the Board of Trustees approved an increase in the required state contribution, effective July 1, 2013. The rate applied to non-uniformed payroll (MoDOT, civilian patrol, and MPERS) will increase from 50.92% to 54.25%. The rate applied to uniformed patrol payroll will increase slightly from 55.03% to 55.23%. The increase in the non-uniformed rate is due to the decrease in number of employees by MoDOT, thus causing a significant decrease in covered payroll dollars.

## CONTACTING THE RETIREMENT SYSTEM'S MANAGEMENT

This financial report is designed to provide a general overview of the System's finances. Questions about this report or requests for additional financial information should be sent to:

MoDOT and Patrol Employees' Retirement System  
PO Box 1930  
Jefferson City, MO 65102-1930

# Statements of Plan Net Assets

As of June 30, 2012 and 2011

	2012	2011
<b>ASSETS:</b>		
Cash	\$ 103,802	\$ 34,434
Receivables		
Contributions	6,563,911	6,057,876
Accrued Interest and Income	3,763,748	3,374,809
Investment Sales	6,675,816	28,250,357
Other	16,600	17,569
Total Receivables	17,020,075	37,700,611
Investments, at Fair Value		
Stocks and Rights/Warrants	454,126,321	503,897,859
Government Obligations	129,547,979	94,892,144
Corporate Bonds	39,478,021	28,671,607
Real Estate	150,601,879	143,696,195
Mortgages and Asset-Backed Securities	106,471,971	146,951,071
Absolute Return	135,413,759	153,035,433
Tactical Fixed Income	22,155,767	81,495,581
Short-Term Investments	52,458,363	33,267,053
Venture Capital & Partnerships	443,121,917	362,322,778
Total Investments	1,533,375,977	1,548,229,721
Invested Securities Lending Collateral	57,498,405	60,133,588
Prepaid Expenses	5,448	6,794
Capital Assets		
Land	84,000	84,000
Building	581,619	581,619
Furniture, Equipment and Software	3,423,799	3,414,235
Accumulated Depreciation	(1,174,573)	(792,565)
Net Capital Assets	2,914,845	3,287,289
<b>TOTAL ASSETS</b>	<b>1,610,918,552</b>	<b>1,649,392,437</b>
<b>LIABILITIES:</b>		
Long-Term Payable	0	108,900
Short-Term Payable	108,900	397,500
Accounts Payable	1,377,330	1,559,815
OPEB Obligation	459,906	364,124
Security Lending Collateral	57,698,128	60,339,959
Investment Purchases	9,870,742	30,941,463
<b>TOTAL LIABILITIES</b>	<b>69,515,006</b>	<b>93,711,761</b>
<b>NET ASSETS HELD IN TRUST FOR PENSION BENEFITS</b>	<b>\$1,541,403,546</b>	<b>\$1,555,680,676</b>

See accompanying Notes to the Financial Statements.



# Statements of Changes in Plan Net Assets

For the Years Ended June 30, 2012 and 2011

	2012	2011
<b><u>ADDITIONS:</u></b>		
Contributions-Employer	\$ 164,880,140	\$ 150,022,169
Contributions-Employee	202,843	45,361
Contributions-Service Transfers from Other System	264,954	17,609,276
Contributions-Other	908,898	453,984
Total Contributions	166,256,835	168,130,790
Investment Income from Investing Activities		
Net Appreciation in Fair Value of Investments	24,342,528	271,818,669
Interest and Dividends	34,245,407	26,222,245
Less: Investment Expenses	16,706,404	18,538,828
Net Investment Income	41,881,531	279,502,086
Income from Securities Lending Activities		
Security Lending Gross Income	173,381	191,719
Less: Securities Lending Expenses (Income), net	(36,652)	81,753
Net Income from Securities Lending Activities	210,033	109,966
Other Income	13,760	33,141
<b>NET ADDITIONS</b>	<b>208,362,159</b>	<b>447,775,983</b>
<b><u>DEDUCTIONS:</u></b>		
Monthly Benefits	219,704,320	202,153,768
Administrative Expenses	2,934,969	2,658,849
<b>TOTAL DEDUCTIONS</b>	<b>222,639,289</b>	<b>204,812,617</b>
NET (DECREASE) INCREASE	(14,277,130)	242,963,366
<b>NET ASSETS HELD IN TRUST FOR PENSION BENEFITS</b>		
Beginning of Year	<u>1,555,680,676</u>	<u>1,312,717,310</u>
End of Year	<u>\$1,541,403,546</u>	<u>\$1,555,680,676</u>

See accompanying Notes to the Financial Statements.

# Notes to the Financial Statements

For the Years Ended June 30, 2012 and 2011

## NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

As established under Section 104.020 of the Revised Statutes of Missouri (RSMo), the Missouri Department of Transportation and Highway Patrol Employees' Retirement System (MPERS) is a body corporate and an instrumentality of the State of Missouri (State). Due to the nature of MPERS' reliance on funding from the Missouri Department of Transportation (MoDOT) and the Missouri State Highway Patrol (MSHP) and control of the overall plan document by the legislative and executive branches of state government, MPERS is considered a part of the State of Missouri financial reporting entity and is included in the State's financial reports as a component unit shown as a pension trust fund.

### **Note 1 (a) - Basis of Accounting**

The financial statements were prepared using the accrual basis of accounting. Contributions are due to MPERS when employee services have been performed and paid. Contributions are recognized as revenues when due, pursuant to statutory requirements. Benefits are recognized when due and payable and expenses are recorded when the corresponding obligations are incurred. Dividend income is recognized when dividends are declared. Interest income is recognized when earned.

### **Note 1 (b) - Method Used to Value Investments**

Investments are reported at fair value on a trade date basis. Bonds and stocks traded on a national or international exchange are valued at the reported sales price at current exchange rates. Mortgages are valued on the basis of future principal and interest payments, and are discounted at prevailing interest rates for similar instruments. The fair value of real estate and timber

investments are based on net asset value estimates provided by the general partners' administrators or portfolio managers, which are compared to independent appraisals. Investments that do not have an established market are reported at estimated fair value. The fair value of the absolute return, venture capital and partnership portfolios are based on valuations of the underlying companies as reported by the general partner or portfolio manager.

### **Note 1 (c) - Capital Assets**

MPERS capitalizes assets with an expected useful life greater than one year and a cost greater than \$1,000. Capital assets are depreciated on the straight-line method over the estimated useful lives of the related assets. The estimated useful lives are as follows:

Furniture, Equipment and Software	3 – 10 years
Building and Improvements	30 years

### **Note 1 (d) - Use of Estimates**

The preparation of financial statements in conformity with U.S. generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

## NOTE 2 – PLAN DESCRIPTIONS AND CONTRIBUTION INFORMATION

MPERS is a body corporate and an instrumentality of the state as a multiple-employer, public employee retirement system with one plan that has three benefit structures known as the Closed Plan, the Year 2000 Plan, and the Year 2000 Plan-2011 Tier. The plan provides retirement, survivor, and disability benefits for employees of MoDOT, MSHP, and MPERS' staff. The plan is administered in accordance with the requirements of a cost sharing, multiple-employer, public employee retirement plan under the Revised Statutes of Missouri. In MPERS are vested the powers and duties specified in sections 104.010 to 104.312, 104.601 to 104.805, and 104.1003 to 104.1093, RSMo., and such other powers as may be necessary or proper to enable it, its officers, employees,

and agents to carry out fully and effectively all the purposes outlined pursuant to these sections. Responsibility for the operation and administration of the System is vested in the Board of Trustees. Detailed information regarding contributions can be found in Note 5.

Generally, all covered employees hired before July 1, 2000 are eligible for membership in the Closed Plan. All covered employees hired on or after July 1, 2000 and before January 1, 2011 are eligible for membership in the Year 2000 Plan. All covered employees hired on or after January 1, 2011 are eligible for membership in the Year 2000 Plan's 2011 Tier.

# Notes to the Financial Statements

For the Years Ended June 30, 2012 and 2011

## ***Membership in the Closed Plan, Year 2000 Plan, and 2011 Tier as of June 30***

		2012		2012	2011
	Closed	Year 2000	2011 Tier	Total	Total
Retirees, Beneficiaries, and Disabilities					
Currently Receiving Benefits	5,093	2,975	0	8,068	7,792
Terminated Employees Entitled to					
But Not Yet Receiving Benefits	1,631	407	0	2,038	1,864
Active Employees					
Vested	4,019	2,213	0	6,232	6,568
Non-Vested	0	1,014	198	1,212	1,592
<b>Total Membership</b>	<b>10,743</b>	<b>6,609</b>	<b>198</b>	<b>17,550</b>	<b>17,816</b>

### **Closed Plan Description**

Employees covered by the Closed Plan are fully vested for benefits upon receiving 5 years of creditable service. Under the Closed Plan, MoDOT and civilian employees may retire with full benefits upon the earliest of attaining:

- Age 65 with 4 or more years of creditable service (active);
- Age 65 with 5 or more years of creditable service (terminated & vested);
- Age 60 with 15 or more years of creditable service (active or terminated & vested); or
- "Rule of 80" – at least age 48 with sum of member's age and service equaling 80 or more (active or terminated & vested).

The following provisions apply for uniformed patrol members of the Closed Plan:

- Age 55 with 4 or more years of creditable service (active);
- Age 55 with 5 or more years of creditable service (terminated & vested);
- "Rule of 80" – at least age 48 with sum of member's age and service equaling 80 or more (active or terminated & vested); or
- Mandatory retirement at age 60 (active).

All non-uniformed members may retire early, with reduced benefits, at age 55 with at least 10 years of creditable service.

The base benefit in the Closed Plan is equal to 1.6% multiplied by the final average pay multiplied by years of creditable service. For members of the uniformed patrol, the base benefit is calculated by applying the same formula, then multiplying the product by 1.333333.

Retired uniformed members will receive an additional benefit of \$90 per month, plus cost-of-living adjustments (COLAs), until attainment of age 65. This payment,

however, is reduced by any amount earned during gainful employment. This benefit is not available to uniformed members hired after January 1, 1995.

For members employed prior to August 28, 1997, COLAs are provided annually based on 80% of the change in the consumer price index for all urban consumers for the United States (CPI-U). The minimum rate is 4% and the maximum rate is 5%, until the cumulative amount of COLAs equals 65% of the original benefit. Thereafter, the 4% minimum rate is eliminated and the annual COLA rate will be equal to 80% of the increase in the CPI-U (annual maximum of 5%). For members employed on or after August 28, 1997, COLAs are provided annually based on 80% of the increase in the CPI-U, up to a maximum rate of 5%.

The BackDROP is a payment option that is available to eligible members upon retirement. This option provides for a benefit to be calculated as if the member elected to retire at a previous date. If the BackDROP is elected, the monthly benefit payable on the actual retirement date is based on the benefit that would have been received by the member had he/she left employment and retired on the BackDROP date. In addition, the member will receive a lump sum payment equal to 90% of the life income annuity amount the member would have received during the BackDROP period. This lump sum amount includes any COLAs and other benefit increases; also, credit will be received for the unused sick leave balance as of the date of retirement.

The life income annuity payment option (which contains no provision for survivorship) and the life income with 60 or 120 month guaranteed payment options are available to all members. Joint and 50% or 100% survivor options are available if married at the time of retirement. In the Closed Plan, the reduction for the joint & 100% survivor option is based on the difference between the age of the

# Notes to the Financial Statements

For the Years Ended June 30, 2012 and 2011

member and the survivor. There is no reduction for the joint and 50% survivor option.

If a reduced joint and survivor option is chosen at the time of retirement and the spouse precedes the member in death, the benefit will revert back (pop-up) to a normal annuity.

Members may name a new spouse for survivor benefits if:

- They were single at retirement and since married;
- They elected a spouse option at the time of retirement, the spouse preceded the member in death, and then a remarriage occurred.

The member has 1 year from the date of marriage to re-elect a payment option and name a new spouse.

All members who retire from active employment or long-term disability, or begin receiving normal or work-related disability benefits, on or after September 28, 1985, are provided a \$5,000 death benefit payable to designated beneficiaries.

## **Year 2000 Plan Description**

Employees covered by the Year 2000 Plan are fully vested for benefits upon earning 5 years of creditable service. Under the Year 2000 Plan, MoDOT and civilian employees may retire with full benefits upon the earliest of attaining:

- Age 62 and with 5 or more years of creditable service (active or terminated & vested);
- "Rule of 80" – at least age 48 with sum of member's age and service equaling 80 or more (active or terminated & vested).

The following provisions apply for uniformed patrol members of the Year 2000 Plan:

- "Rule of 80" – at least age 48 with sum of member's age and service equaling 80 or more (active or terminated & vested);
- Mandatory retirement at age 60 with 5 or more years of creditable service (active only).

All members may retire early with reduced benefits at age 57 with at least 5 years of creditable service.

The base benefit in the Year 2000 Plan is equal to 1.7% multiplied by the final average pay multiplied by years of creditable service. Members retiring under the Rule of 80, and uniform patrol members retiring at the mandatory retirement age (currently 60) with 5 years of creditable service, receive an additional temporary benefit until age 62. The temporary benefit is equivalent

to 0.8% multiplied by final average pay multiplied by years of creditable service.

COLAs are provided annually based on 80% of the change in the CPI-U, up to a maximum rate of 5%.

The BackDROP is a payment option that may be available to members upon retirement. This option provides for a monthly benefit to be calculated as if the member elected to retire at a previous date. If the BackDROP is elected, the monthly benefit payable on the actual retirement date is based on the benefit that would have been received by the member had he/she left employment and retired on the BackDROP date. In addition, the member will receive a lump sum payment equal to 90% of the life income annuity amount the member would have received during the BackDROP period. This lump sum amount includes any temporary benefits, COLAs and other benefit increases; also, credit will be received for the unused sick leave balance as of the date of retirement.

The life income annuity payment option (with no provision for survivorship) and the life income with 120 or 180 months guaranteed payment options are available to all members. Joint and 50% or 100% survivorship options are available if married at the time of retirement. The reduction for the joint and 50% or 100% survivor options is based on the member's age at retirement, as well as the age difference between the member and the survivor.

If a reduced joint and survivor option is chosen at the time of retirement and the spouse precedes the member in death, the benefit will revert back (pop-up) to a normal annuity.

Members may name a new spouse for survivor benefits if:

- They were single at retirement and since married;
- They elected a spouse option at the time of retirement, the spouse preceded the member in death, and then a remarriage occurred.

The member has 1 year from the date of marriage to re-elect the payment option and name a new spouse.

All members who retire from active employment or long-term disability, or begin receiving work-related disability benefits, on or after July 1, 2000, are provided a \$5,000 death benefit payable to designated beneficiaries.

## **Year 2000 Plan-2011 Tier Description**

Employees covered by the 2011 Tier are fully vested for benefits upon earning 10 years of creditable service. Under the 2011 Tier, MoDOT and civilian employees may



# Notes to the Financial Statements

For the Years Ended June 30, 2012 and 2011

retire with full benefits upon the earliest of attaining:

- Age 67 and with 10 or more years of creditable service (active or terminated & vested);
- "Rule of 90" – at least age 55 with sum of member's age and service equaling 90 or more (active only).

Active MoDOT and civilian employees may retire early with reduced benefits at age 62 with at least 10 years of creditable service.

The following provisions apply for uniformed patrol members of the 2011 Tier:

- Age 55 and with 10 or more years of creditable service (active only);
- Mandatory retirement at age 60 with no minimum service amount (active only).

Terminated and vested uniformed patrol employees may retire at age 67 with 10 or more years of creditable service.

The base benefit in the 2011 Tier is equal to 1.7% multiplied by the final average pay multiplied by years of creditable service. Members retiring under the Rule of 90, and uniform patrol members retiring at the mandatory retirement age (currently 60) or at age 55 with 10 years of creditable service, receive an additional temporary benefit until age 62. The temporary benefit is equivalent to 0.8% multiplied by final average pay multiplied by years of creditable service.

COLAs are provided annually based on 80% of the change in the CPI-U, up to a maximum rate of 5%.

The life income annuity payment option (with no provision for survivorship) and the life income with 120 or 180 months guaranteed payment options are available to all members. Joint and 50% or 100% survivorship options are available if married at the time of retirement. The reduction for the joint and 50% or 100% survivor options is based on the member's age at retirement, as well as the age difference between the member and the survivor.

If a reduced joint and survivor option is chosen at the time of retirement and the spouse precedes the member in death, the benefit will revert back (pop-up) to a normal annuity.

Members may name a new spouse for survivor benefits if:

- They were single at retirement and since married;
- They elected a spouse option at the time of retirement, the spouse preceded the member in death, and then a remarriage occurred.

The member has 1 year from the date of marriage to re-elect the payment option and name a new spouse.

All members who retire from active employment or long-term disability, or begin receiving work-related disability benefits, on or after January 1, 2011, are provided a \$5,000 death benefit payable to designated beneficiaries.

## **Contributions**

Beginning January 1, 2011, employee contributions of 4% of gross pay are required for those covered by the Year 2000 Plan-2011 Tier.

Employer contributions are determined through annual actuarial valuations. Administrative expenses are financed through contributions from MoDOT, MSHP and MPERS, and investment earnings.

MoDOT, MSHP and MPERS are required to make contributions to the plan based on the actuarially determined rate. Prior to August 13, 1976, contributions by all plan members were required. Accumulated employee contributions made prior to that time, plus interest, were refunded to applicable members. Maximum contribution rates were eliminated August 13, 1976.

# Notes to the Financial Statements

For the Years Ended June 30, 2012 and 2011

## ***Schedule of Funded Status and Funding Progress***

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) Entry Age (b)	Unfunded AAL (UAAL) (b-a)	Percent Funded (a/b)	Annual Covered Payroll (c)	UAAL Percentage of Covered Payroll ((b-a)/c)
6/30/2012	\$1,531,033,613	\$3,306,278,671	\$1,775,245,058	46.31%	\$341,637,559	519.63%

The schedules of funding progress, presented as required supplementary information (RSI) following the Notes to the Financial Statements, present multiyear

trend information about whether the actuarial values of plan assets are increasing or decreasing over time relative to the actuarial accrued liabilities for benefits.

## ***Additional Information as of the June 30, 2012 Actuarial Valuation follows:***

Valuation Date	6/30/2012
Actuarial Cost Method	Entry Age
Amortization Method	Closed, Level Percent of Payroll
Remaining Amortization Period	20 years*
Asset Valuation Method	3-year Smoothing
Actuarial Assumptions:	
Investment Rate of Return	8.25%
Projected Salary Increases	3.75% to 12.25%
COLAs	2.6% Compound
Price Inflation	3.75%

\*single equivalent period

## NOTE 3 – DEPOSITS AND INVESTMENTS

The Board of Trustees has established policies and procedures by which funds are invested by bank custodians and investment managers. Section 104.150, RSMo, provides the authority for the board to invest MPERS funds.

### ***Note 3 (a) - Deposit and Investment Risk Policies***

#### ***Concentration of Credit Risk***

Concentration of credit risk is the risk of loss attributed to the magnitude of the System's investment in a single issuer. Unless authorized under a separate Investment Management Agreement, it is the policy of the System to limit each equity manager to investing a maximum of 5% of the market value of their portfolio in any single company and to limit fixed income managers to investing 3% of their portfolio into obligations of a single corporation. Fixed income obligations of the U.S. Government or U.S. Government agencies may be held in any amounts.

#### ***Investment Custodial Credit Risk***

Custodial credit risk is an investment risk in that, in the event of the failure of the counterparty to a transaction,

the System will not be able to recover the value of its investment or the collateral securities that are in the possession of an outside party. Investment securities are exposed to custodial credit risk if the securities are uninsured, are not registered in the name of the System, and are held by either: a) the counterparty or b) the counterparty's trust department or agent but not in the System's name. It is the policy of the System to require that all investments be clearly marked as to ownership and, to the extent possible, shall be registered in the name of the System.

#### ***Cash Deposit Custodial Credit Risk***

Cash deposit custodial credit risk is the risk that, in the event of the failure of depository financial institution, the System will not be able to recover deposits or will not be able to recover collateral securities that are in the possession of an outside party. Missouri state law requires that all public funds must be collateralized with acceptable securities having market values of at least 100% of the amount of funds on deposit (less any amount covered by FDIC insurance).

# Notes to the Financial Statements

For the Years Ended June 30, 2012 and 2011

## **Market Risk**

Market risk is the risk that the fair value of an investment will be adversely impacted due to a change in value of the underlying market. The three primary market risks prevalent in the System's investment portfolio are equity prices, interest rates, and foreign currencies. Equity risk is the risk that stock prices fall and/or the volatility in the equity market increases. Interest rate risk is the risk that fixed income securities (or any investment primarily valued on a yield basis) will drop in value due to an increase in interest rates. Currency risk is the risk that changes to foreign exchange rates will adversely impact the fair value of non-U.S. Dollar denominated assets. The System protects the portfolio against market risks by adopting a diversified asset allocation that limits the amount of exposure to each underlying market risk. Market risks are also controlled by monitoring the types, amounts, and degree of risk that each investment manager takes for their specific mandate.

## **Investment Credit Risk**

Investment credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligations. Unless authorized under a separate Investment Management Agreement, it is the policy of the System to limit fixed income managers to purchasing securities that possess a minimum credit rating of "Baa" by Moody's and "BBB" by Standard & Poor's. Issues subsequently downgraded below these ratings must be brought to the attention of the Chief Investment Officer. Where counterparty risk is present, the System's

investment managers seek to control credit risk through counterparty credit evaluations and approvals, counterparty credit limits and exposure monitoring procedures.

## **Note 3 (b) - Cash Deposits**

Cash balances include short-term securities held by the custodial bank to meet future obligations and operating balances held by the depository bank. As of June 30, 2012 and 2011, MPERS had carrying amount of deposits of (\$1,073,610) and (\$1,246,566), respectively, and a bank balance of \$9 and \$4, respectively. The FDIC covered the bank balances. To maximize investment income, cash is invested in overnight repurchase agreements, thus causing the negative cash amounts disclosed above. The balances in these repurchase agreements at June 30, 2012 and 2011 were \$1,177,412 and \$1,281,000, respectively. As of June 30, 2012 and 2011, no investments were held as repurchase agreements that were uninsured or unregistered, with securities held by the counterparty or by its trust department or agent but not in MPERS' name.

## **Note 3 (c) - Concentrations**

No investments in any one organization (other than those issued or sponsored by the U.S. government and those in pooled investments) represent 5% of plan net assets.

# Notes to the Financial Statements

For the Years Ended June 30, 2012 and 2011

## **Note 3 (d) – Investments**

### **Summary of Investments by Type at June 30**

	2012		2011	
	Carrying Amount	Fair Value	Carrying Amount	Fair Value
Government Obligations	\$ 122,110,534	\$ 129,547,979	\$ 92,968,786	\$ 94,892,144
Corporate Bonds	38,384,346	39,478,021	27,995,407	28,671,607
Stock and Rights/Warrants	410,279,544	454,126,321	425,484,627	503,897,859
Real Estate	148,005,102	150,601,879	149,702,446	143,696,195
Mortgages & Asset-Backed Securities	116,279,532	106,471,971	152,578,823	146,951,071
Absolute Return	111,906,908	135,413,759	117,107,298	153,035,433
Tactical Fixed Income	14,586,515	22,155,767	55,537,756	81,495,581
Venture Capital & Partnerships	432,653,541	443,121,917	367,240,639	362,322,778
Short-Term Investments	53,633,283	53,635,775	34,552,499	34,548,053
Securities Lending Collateral	57,498,405	57,498,405	60,133,588	60,133,588
<b>Total Investments</b>	<b>\$1,505,337,710</b>	<b>1,592,051,794</b>	<b>\$1,483,301,869</b>	<b>1,609,644,309</b>

### **Reconciliation to Statement of Plan Net Assets:**

Less: Repurchase Agreements	(1,177,412)	(1,281,000)
Less: Securities Lending Collateral	(57,498,405)	(60,133,588)
<b>Investments per Statement of Plan Net Assets</b>	<b>\$1,533,375,977</b>	<b>\$1,548,229,721</b>

### **Note 3 (e) – Investment Interest Rate Risk**

The following table summarizes the maturities of government obligations, corporate bonds, convertible

corporate bonds, mortgages, asset-backed securities, and tactical fixed income which are exposed to interest rate risk.

### **Summary of Weighted Average Maturities**

Investment Type	Fair Value	Investment Maturities (in years) as of 6/30/2012			
		Less than 1	1 - 5	6 - 10	More than 10
Asset-Backed Securities	\$ 4,083,276	\$ 0	\$ 1,011,637	\$ 1,215,908	\$ 1,855,731
Commercial Mortgage-Backed Securities	49,618,141	0	0	0	49,618,141
Corporate Bonds	18,584,780	0	3,783,207	2,536,257	12,265,316
Government Agencies	55,271,235	25,463,430	2,346,367	12,102,162	15,359,276
Government Bonds	10,371,603	0	0	650,241	9,721,362
Government Mortgage-Backed Securities	33,921,551	0	0	12,427,935	21,493,616
Index Linked Govt Bonds	36,044,114	0	10,847,520	16,942,097	8,254,497
Municipal/Provincial Bonds	27,861,026	5,001,700	1,688,912	4,278,850	16,891,564
Non-Govt Backed C.M.O.s	18,849,003	0	0	0	18,849,003
<b>Total</b>	<b>254,604,729</b>	<b>\$30,465,130</b>	<b>\$19,677,643</b>	<b>\$50,153,450</b>	<b>\$154,308,506</b>
Pooled Investments	43,049,008				
<b>Grand Total</b>	<b>\$297,653,737</b>				



# Notes to the Financial Statements

For the Years Ended June 30, 2012 and 2011

## **Note 3 (f) – Investment Credit Ratings**

The following table summarizes the credit ratings of the government obligations, corporate bonds, mortgages and asset-backed securities, and tactical fixed income on the Statement of Plan Net Assets.

### **Summary of Credit Ratings**

<b>Investment Type</b>	<b>Quality Rating</b>	<b>6/30/2012 Fair Value</b>	<b>6/30/2011 Fair Value</b>
Asset-Backed Securities	AAA	\$ 1,211,982	\$ 538,073
Asset-Backed Securities	AA	1,784,315	309,964
Asset-Backed Securities	A	409,230	1,544,685
Asset-Backed Securities	BB	0	182,215
Asset-Backed Securities	CC	242,114	293,800
Asset-Backed Securities	not rated	435,635	711,160
Commercial Mortgage-Backed Securities	AAA	5,068,397	7,090,663
Commercial Mortgage-Backed Securities	AA	0	440,130
Commercial Mortgage-Backed Securities	A	5,976,159	7,593,132
Commercial Mortgage-Backed Securities	BBB	6,050,936	7,128,251
Commercial Mortgage-Backed Securities	BB	2,129,918	15,715,073
Commercial Mortgage-Backed Securities	B	18,075,809	17,418,942
Commercial Mortgage-Backed Securities	CCC	813,272	2,885,946
Commercial Mortgage-Backed Securities	D	2,576,921	1,973,888
Commercial Mortgage-Backed Securities	not rated	8,926,729	10,084,789
Corporate Bonds	AA	792,531	3,051,986
Corporate Bonds	A	860,505	8,899,741
Corporate Bonds	BBB	2,913,716	14,754,574
Corporate Bonds	BB	967,174	1,154,266
Corporate Bonds	not rated	13,050,854	811,040
Government Agencies	AAA	0	11,903,475
Government Agencies	AA	39,620,880	0
Government Agencies	A	15,060,180	0
Government Agencies	Agency	590,175	0
Government Bonds	Agency	10,371,603	35,306,046
Government Mortgage-Backed Securities	Agency	33,921,551	59,526,955
Government Mortgage-Backed Securities	not rated	0	272,694
Index Linked Government Bonds	Agency	36,044,114	32,099,727
Municipal/Provincial Bonds	AAA	9,011,138	10,000,669
Municipal/Provincial Bonds	AA	10,109,656	2,047,776
Municipal/Provincial Bonds	A	940,024	2,119,671
Municipal/Provincial Bonds	not rated	7,800,208	1,414,781
Non-Government Backed C.M.O.s	AAA	6,715,580	1,819,835
Non-Government Backed C.M.O.s	AA	0	65,304
Non-Government Backed C.M.O.s	A	302,100	308,935
Non-Government Backed C.M.O.s	BBB	155,518	0
Non-Government Backed C.M.O.s	BB	732,819	934,959
Non-Government Backed C.M.O.s	CCC	1,458,536	2,358,302
Non-Government Backed C.M.O.s	CC	460,999	523,894
Non-Government Backed C.M.O.s	D	544,616	0
Non-Government Backed C.M.O.s	not rated	8,478,835	7,229,481
Pooled Investments	not rated	43,049,008	81,495,581
<b>Total</b>		<b>\$297,653,737</b>	<b>\$352,010,403</b>

# Notes to the Financial Statements

For the Years Ended June 30, 2012 and 2011

## **Note 3 (g) – Investment Foreign Currency Risk**

### **Exposure to Foreign Currency Risk as of June 30**

Foreign Currency	Cash and Equivalents	Equities	Real Estate/ Partnerships	6/30/12 Total	6/30/11 Total
Australian Dollar	\$ 35,862	\$ 837,099	\$ 0	\$ 872,961	\$ 1,333,506
British Pound Sterling	6,165	323,853	0	330,018	1,017,517
Canadian Dollar	2,280	430,335	0	432,615	109,846
Euro	73,978	548,237	16,473,905	17,096,120	14,613,111
Hong Kong Dollar	0	986,115	0	986,115	502,212
Japanese Yen	9,114	512,837	0	521,951	655,900
Philippine Peso	0	0	0	0	441,258
Singapore Dollar	2,976	432,967	0	435,943	2,614,048
Swedish Krona	0	0	0	0	372,527
Swiss Franc	432	0	0	432	0
<b>Total Exposure Risk</b>	<b>\$130,807</b>	<b>\$4,071,443</b>	<b>\$16,473,905</b>	<b>\$20,676,155</b>	<b>\$21,659,925</b>

## **Note 3 (h) – Securities Lending**

In accordance with the Board of Trustees' investment policy, MPERS participates in a securities lending program. The Northern Trust Company administers the program. There are no restrictions on the amount of securities that may be lent.

Securities that may be loaned include U.S. government and agency securities, corporate equity, and fixed income securities. Collateral may include cash, U.S. government securities and irrevocable letters of credit. U.S. securities are loaned in exchange for collateral valued at 102% of the market value of the securities, plus any accrued interest. Non-U.S. securities are loaned in exchange for collateral valued at 105% of the market value of the securities, plus any accrued interest. On June 30, 2012 and 2011, MPERS had no credit risk exposure to borrowers, since the amount of collateral exceeded the amount of the loans.

Non-cash collateral cannot be pledged or sold unless the borrower defaults. The average term of the System's loans was approximately 96 days and 85 days, as of June 30, 2012 and June 30, 2011, respectively. Cash open collateral is invested in a short-term investment

pool, which had an interest sensitivity of 39 days and 21 days, as of June 30, 2012 and June 30, 2011, respectively. Cash collateral may also be invested separately in "term loans", in which case the investments match the loan term. These loans can be terminated on demand by either lender or borrower. There were no known violations of legal or contractual provisions, or borrower or lending agent default losses. There were no dividends or coupon payments owing on the securities lent. Securities lending earnings are credited on approximately the fifteenth day of the following month.

Indemnification deals with a situation in which a client's securities would not be returned due to the insolvency of a borrower and Northern Trust would fail to live up to its contractual responsibilities relating to the lending of those securities. Northern Trust's responsibilities include performing appropriate borrower and collateral investment credit analyses and demanding adequate types and levels of collateral.

# Notes to the Financial Statements

For the Years Ended June 30, 2012 and 2011

The collateral held (including both cash collateral recognized in the Statement of Plan Net Assets and non-cash collateral) was as follows at June 30:

## **Collateral Held**

<b>Investment Type</b>	<b>2012</b>	<b>2011</b>
Equities	\$46,061,696	\$41,536,004
Government & government sponsored securities	10,674,816	11,786,835
Corporate bonds	961,616	7,017,120
	<u>\$57,698,128</u>	<u>\$60,339,959</u>

## **Note 3 (i) – Derivatives**

A derivative financial instrument is an investment whose value depends on the values of one or more underlying assets, financial indexes, or commodity prices. These investments include futures contracts, options contracts, and forward foreign currency exchange. Derivative financial instruments involve credit risk and market risk, as described in Note 3 (a), in varying levels. The notional value related to these derivative instruments are generally not recorded on the financial statements;

however, the change in market value of these instruments is incorporated in performance. The notional/market value of \$21,061,606 for the various contracts in MPERS' portfolio as of June 30, 2012 is recorded in investments on the Statement of Plan Net Assets. The change in fair value of \$21,061,606 for the year ended June 30, 2012 is recorded in investment income on the Statement of Changes in Plan Net Assets. MPERS had no derivatives contracts in their portfolio as of June 30, 2011.

## **Investment Derivatives as of June 30, 2012**

<b>Type</b>	<b>Classification</b>	<b>Notional/ Market Value</b>	<b>Cost</b>	<b>Unrealized Gain (Loss)</b>
Futures Contracts	Investments, at fair value	\$ 20,617,280	\$0	\$ 20,617,280
Swap Contracts	Investments, at fair value	444,403	0	444,403
Foreign Currency Forward Contracts	Investments, at fair value	(77)	0	(77)
		<u>\$21,061,606</u>	<u>\$0</u>	<u>\$21,061,606</u>

As of June 30, 2012, there is no counterparty risk associated with MPERS' derivatives exposures since all positions are traded on a regulated exchange.

# Notes to the Financial Statements

For the Years Ended June 30, 2012 and 2011

## NOTE 4 – RECEIVABLES

Receivables at June 30 consisted of the following:

### ***Receivables***

Type	2012	2011
Contributions-MoDOT	\$ 3,970,864	\$ 3,972,515
Contributions-MSHP Non-Uniformed	823,181	697,114
Contributions-MSHP Uniformed	1,749,387	1,370,534
Contributions-Retirement System	20,479	17,713
Commission Recapture	379	3,008
Securities Lending	16,221	14,477
Amounts Due From Members	0	84
Investment Interest & Income	3,763,748	3,374,809
Investment Sales	6,675,816	28,250,357
	<b><u>\$17,020,075</u></b>	<b><u>\$37,700,611</u></b>

## NOTE 5 – CONTRIBUTIONS

MoDOT, the Highway Patrol, and MPERS make contributions to the System, as well as employees covered under the Year 2000 Plan-2011 Tier. MPERS permanent funding policy provides for actuarially determined employer contributions using the entry-age normal cost method on a closed group basis (consisting of normal cost and amortization of any unfunded accrued liabilities over a 30-year period, beginning July 1, 2006). (The objective is to reduce the period by one year each year.) A temporary accelerated policy has been adopted where the total contribution is based on entry-age normal cost plus a 15-year amortization period for unfunded retiree liabilities and a 30-year amortization period for other unfunded liabilities. Both amortization periods are closed periods starting July 1, 2010. This temporary accelerated policy was adopted by the MPERS' Board of Trustees on September 17, 2009 and will remain in effect until such time as the retiree liability becomes 100% funded or the permanent

policy produces a higher contribution rate. Actuarially determined rates, expressed as percentages of annual covered payroll, provide for amounts sufficient to fund those benefits designated by state statute to be funded in advance. Actuarial assumptions used to compute contribution requirements are the same as those used to compute the pension benefit obligation. The employee contribution rate for members of the Year 2000 Plan-2011 Tier is set by statute.

Required employer contributions totaling \$164,880,140 and \$150,022,169 for fiscal years 2012 and 2011, respectively, represent funding of normal costs and amortization of the unfunded accrued liability. Actual contributions made were 100% of required contributions. Contribution rates as determined by the System's actuary for the years ended June 30, 2012 and 2011 are shown below. The Board established actual rates to be the same as the actuarially determined rates.

### ***Contribution Rates***

MoDOT, MPERS & Civilian Patrol	2012	2011 Tier Employee	MoDOT, MPERS & Civilian Patrol	2011	2011 Tier Employee
	Uniformed Patrol			Uniformed Patrol	
45.45%	58.63%	4.00%	39.46%	49.53%	4.00%



# Notes to the Financial Statements

For the Years Ended June 30, 2012 and 2011

## NOTE 6 – RELATED PARTY TRANSACTIONS

MoDOT rented office space from MPERS. The contract began in June 2008 and was effective through December 2011. This amounted to other income

of \$13,760 and \$33,141 during FY12 and FY11, respectively. As of January 1, 2012, MoDOT no longer rents the space.

## NOTE 7 – PERSONAL SERVICES AND RETIREMENT PLAN

MPERS employed 14 full-time employees on June 30, 2012 and June 30, 2011. Six former MPERS employees have retired. Full-time employees are also members of the System. For these employees, MPERS accrued 45.45% of payroll during FY12, amounting to \$435,074, which was equal to the required contribution. The net

obligations for FY12 and the two preceding years are shown below. These amounts are recorded as both a contribution and administrative expense. Information regarding the retirement plans can be found in Notes 2 and 5.

### ***Net Obligations***

<b>Year Ended June 30</b>	<b>Annual Required Contribution Percent</b>	<b>Dollars</b>	<b>Percent Contributed</b>	<b>Net Obligation</b>
2010 <sup>(2)</sup>	31.40% <sup>(1)</sup>	282,762	100%	\$0
2011	39.46% <sup>(1)</sup>	365,073	100%	\$0
2012	45.45% <sup>(1)</sup>	435,074	100%	\$0

(1) The Annual Required Contribution rate is equal to the Actuarially Required Contribution rate.

(2) New assumptions adopted.

## NOTE 8 – OTHER POST-EMPLOYMENT BENEFITS (OPEB)

In addition to the retirement benefits described previously, MPERS provides a portion of health care insurance through the MoDOT and MSHP Medical and Life Insurance Plan (Insurance Plan) in accordance with Missouri State statutes. For the purpose of reporting OPEB costs and obligations in accordance with Governmental Accounting Standards Board (GASB) Statement 45, the Insurance Plan is considered an agent multiple-employer defined benefit plan administered by MoDOT. Medical insurance benefits are established by the Insurance Plan's Board of Trustees and are approved by the Missouri Highways and Transportation Commission. Benefits include general inpatient and outpatient medical services; mental, nervous and substance abuse care; and prescriptions. Eligible members are employees who retired from the System with a minimum of 5 years of service and who participate in the Insurance Plan. MoDOT issues a publicly available financial report that includes financial statements and required supplementary information for the Insurance Plan. Requests for this report should be addressed to MoDOT, Controller's Division, P.O. Box 270, Jefferson City, MO 65102.

Employer and member contributions are established by the Insurance Plan's Board of Trustees and are

approved by the Missouri Highways and Transportation Commission. Premiums vary by coverage categories, which include retirees, certain disabled employees, spouses, certain dependents, and survivors of deceased employees and retirees. Employer and member required contribution rates average approximately 51% and 49%, respectively. The Insurance Plan is financed on a pay-as-you-go basis and is an internal service fund of MoDOT.

MoDOT's actuarial valuations for the Insurance Plan are performed biennially. The July 1, 2011 actuarial valuation was used for the FY12 financial statements and the July 1, 2009 actuarial valuation was used for the FY11 financial statements. For these periods, the annual required contribution (ARC) is equal to the annual OPEB cost. MPERS contributed \$26,739 in FY12 and \$31,619 in FY11 (21.82% and 27% of the ARC respectively), including implicit rate subsidies. Although funding is not related to payroll amounts, an equivalent Annual Required Contribution (ARC) rate would be 12.75% and 12.8% of annual covered payroll of \$960,456 and \$930,925 for FY12 and FY11, respectively. MPERS' share of the net OPEB obligation was \$459,906 and \$364,124 at June 30, 2012 and 2011, respectively. MPERS' share of the changes in the Insurance Plan's net OPEB obligation is shown on next page.

# Notes to the Financial Statements

For the Years Ended June 30, 2012 and 2011

## **OPEB Cost and Obligation for the Year Ended June 30,**

<b>Type</b>	<b>2012</b>	<b>2011</b>
Normal Cost	\$ 60,443	\$ 56,791
Amortization Payment	61,594	60,910
Interest	21,878	17,742
Adjustment to ARC	(21,394)	(16,248)
Annual OPEB Cost	122,521	119,195
Contributions	(26,739)	(31,619)
Increase in Net OPEB Obligation	95,782	87,576
Net OPEB Obligation - Beginning of Year	364,124	276,548
Net OPEB Obligation - End of Year	<u>\$459,906</u>	<u>\$364,124</u>

Because the Insurance Plan is an internal service fund of MoDOT, the Insurance Plan's assets have not been set aside. Because of this, there is no actuarial value of assets, so the entire actuarial accrued liability (AAL) is

unfunded. Based on an actuarial report dated July 1, 2011, MPERS' portion of the AAL is \$1,048,333, which is equal to MPERS' portion of the unfunded actuarial accrued liability (UAAL), as shown below.

## **Actuarial Accrued Liability**

Actuarial Accrued Liability	\$1,048,333
Actuarial Value of Assets	0
Unfunded Actuarial Accrued Liability (UAAL)	<u>\$1,048,333</u>
Funded Ratio (Actuarial Value of Plan Assets/AAL)	0%
Covered Payroll	\$ 960,456
UAAL as a Percentage of Covered Payroll	109%

Actuarial valuations of an ongoing plan reflect long-term perspective and involve estimates of the value of reported amounts and assumptions about the probability of occurrence of events far into the future. Examples include assumptions about future employment, mortality, and the healthcare cost trend. These calculations are subject to continual revision as actual results are compared to past expectations and new estimates are made about the future. A schedule of funding progress is presented as required supplementary information following the notes to the financial statements. As allowed by the GASB, this reporting requirement is being implemented prospectively. Data is not available for prior years. Over time, the schedule of funding progress will present trend information about whether the actuarial value of plan assets is increasing or decreasing relative to the AAL for benefits.

Projections of benefits for financial reporting purposes are based on the substantive plan (the plan as understood by the employers and plan members) and include the types of benefits provided at the time of each valuation and the historical pattern of sharing of benefit costs between the employers and plan members to that point. The actuarial methods and assumptions used include techniques that are designed to reduce short-term volatility in actuarial accrued liabilities and the actuarial value of assets, consistent with the long-term perspective of the calculations. The actuarial methods and assumptions utilized in the valuation are shown on the following table.

# Notes to the Financial Statements

For the Years Ended June 30, 2012 and 2011

## **Actuarial Methods and Assumptions**

Actuarial Cost Method	Projected Unit Credit
UAAL Amortization Method	Level Dollar Amount
UAAL Amortization Period	30 Years
UAAL Amortization Approach	Open
Investment Return (Discount) Rate	4.5%
Healthcare Cost Trend Rate	8%, Decreasing to 5% After 2017

## NOTE 9 – CAPITAL ASSETS

### **Summary of Changes in Capital Assets**

	6/30/2011 Balance	Additions	Deletions/ Retirements	6/30/2012 Balance
Land	\$ 84,000	\$ 0	\$0	\$ 84,000
Buildings	581,619	0	0	581,619
Furniture, Equipment and Software	3,414,235	9,564	0	3,423,799
Less: Accumulated Depreciation	(792,565)	(382,008)	0	(1,174,573)
<b>Total</b>	<b>\$3,287,289</b>	<b>(\$372,444)</b>	<b>\$0</b>	<b>\$2,914,845</b>

	6/30/2010 Balance	Additions	Deletions/ Retirements	6/30/2011 Balance
Land	\$ 84,000	\$ 0	\$ 0	\$ 84,000
Buildings	581,619	0	0	581,619
Furniture, Equipment and Software	3,053,494	383,231	(22,490)	3,414,235
Less: Accumulated Depreciation	(442,587)	(372,468)	22,490	(792,565)
<b>Total</b>	<b>\$3,276,526</b>	<b>\$ 10,763</b>	<b>\$ 0</b>	<b>\$3,287,289</b>

## NOTE 10 – OPERATING LEASES

As of June 30, 2012, MPERS is committed to two equipment and services related leases. The leases extend through May 2014. Expenditures for the years

ended June 30, 2012 and 2011 amounted to \$8,604 and \$25,884 respectively.

### **Future Minimum Lease Payments**

#### **Year Ending June 30**

2013	\$8,604
2014	6,135
<b>Total minimum lease payments</b>	<b><u>\$14,739</u></b>

# Notes to the Financial Statements

For the Years Ended June 30, 2012 and 2011

## NOTE 11 – RISK MANAGEMENT

MPERS is exposed to various risks of loss related to natural disasters, asset theft or damage, errors and omissions, torts, and employee injuries.

MPERS has purchased commercial insurance related to capital asset loss and damage. Ancillary coverage provided through the property policy includes coverage for accounts receivable, loss of money and securities, employee dishonesty, and forgery and alterations. MPERS carries a \$2 million umbrella liability policy. MPERS has coverage through Missouri Highway and Transportation Commission's Self-Insurance Fund related to workers'

compensation. MPERS' has also purchased an executive risk insurance package that includes directors and officers liability (\$1 million aggregate coverage), employment practices liability (\$1 million aggregate coverage) and fiduciary liability coverage (\$5 million aggregate coverage). These coverages are inclusive of legal defense costs and each policy carries a \$25,000 deductible. The State's Legal Expense Fund covers all state employees and officers, and MPERS has purchased surety bonds for the director and staff. Settlements have not exceeded coverages for each of the past three fiscal years.

## NOTE 12 – COMMITMENTS

As of June 30, 2012, MPERS has \$244,384,837 unfunded commitments in alternative investments.



# Required Supplementary Information

## Schedule of Funding Progress

Year Ended June 30	Actuarial Asset Value	Accrued Liability – Entry Age	Unfunded Accrued Liability (UAAL)	Funded Ratio	Actuarial Covered Payroll <sup>(1)</sup>	UAAL as a Percentage of Covered Payroll
2007 <sup>(2)</sup>	\$1,685,807,004	\$2,897,267,409	\$1,211,460,405	58.19%	\$365,012,472	331.90
2008	1,783,902,280	3,019,633,781	1,235,731,501	59.08%	375,984,141	328.67
2009	1,471,496,660	3,113,393,645	1,641,896,985	47.26%	379,542,506	432.60
2010 <sup>(2)</sup>	1,375,844,573	3,258,866,925	1,883,022,352	42.22%	378,063,006	498.07
2011	1,427,290,718	3,297,589,869	1,870,299,151	43.28%	362,654,376	515.72
2012 <sup>(2)</sup>	1,531,033,613	3,306,278,671	1,775,245,058	46.31%	341,637,559	519.63

(1) Values are estimated from contribution rate and amount.

(2) New assumptions and/or methods adopted.

## Schedule of Employer Contributions

Year Ended June 30	Uniformed Patrol			MoDOT, Civilian Patrol & MPERS		
	Annual Required Contribution Percent	Dollars	Percent Contributed	Annual Required Contribution Percent	Dollars	Percent Contributed
2007 <sup>(2)</sup>	44.28 <sup>(1)</sup>	\$27,802,932	100	31.10 <sup>(1)</sup>	\$93,991,526	100
2008	42.61	29,147,429	100	31.01	95,368,363	100
2009	40.22	27,298,132	100	30.72	95,759,843	100
2010 <sup>(2)</sup>	39.95	26,936,683	100	31.40	97,540,023	100
2011	49.53	33,688,925	100	39.46	116,263,825	100
2012 <sup>(2)</sup>	58.63	42,750,061	100	45.45	122,134,406	100

(1) The ARC is the rate adopted by the Board of Trustees. This rate exceeded the actuarially calculated rate.

(2) New assumptions and/or methods adopted.

## Notes to the Schedules of Trend Information

The information presented in the required supplementary schedules was determined as part of the actuarial valuation at the dates indicated. Additional information as of the latest actuarial valuation follows:

Valuation Date .....	June 30, 2012
Actuarial Cost Method .....	Entry Age
Amortized Method .....	Level Percent of Payroll
Remaining Amortization Period .....	20 Years (single equivalent period)
Amortization Approach .....	Closed
Asset Valuation Method .....	3-Year Smoothing
Actuarial Assumptions:	
Investment Rate of Return .....	8.25%
Projected Salary Increase .....	3.75% to 12.25%
Cost-of-Living Adjustments .....	2.6% Compound
Includes Wage Inflation at .....	3.75%

## Required Supplementary Information

### Other Post-Employment Benefit (OPEB) Plan Schedule of Funding Progress for MoDOT and MSHP Medical and Life Insurance Plan

Year Ended June 30	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)
2008	\$0	\$1,178,303	\$1,178,303	0%
2010 <sup>(1)</sup>	0	1,036,681	1,036,681	0%
2012	0	1,048,333	1,048,333	0%

(1) New assumptions adopted

Actuarial valuations are performed biennially. The July 1, 2011 actuarial valuation was used for FY12 financial statements, the July 1, 2009 actuarial valuation was used for FY10 and FY11 financial statements, and the July 1, 2007 actuarial valuation was used for FY08 and FY09 financial statements. As allowed by the GASB, this reporting requirement is being implemented prospectively, as prior years' data is not available.

Because this plan is an internal service fund of MoDOT, assets have not been set aside. Therefore, there is no actuarial value of assets. This results in a calculated funded ratio of zero percent.

### Notes To The Schedule Of Trend Information

The information presented in the required supplementary schedule was determined as part of the actuarial valuation at the date indicated. Additional information as of the latest actuarial valuation follows:

Valuation Date .....	July 1, 2011
Actuarial Cost Method.....	Projected Unit Credit
UAAL Amortization Method .....	Level Dollar Amount
UAAL Amortization Period .....	30 Years
UAAL Amortization Approach .....	Open
Investment Return (discount) Rate .....	4.5%
Healthcare Cost Trend Rate .....	8% Decreasing to 5% after 2017

# Supplementary Information

## Schedules Of Administrative Expenses

For the Years Ended June 30, 2012 and 2011

	2012	2011
<b>Personal Services:</b>		
Salary Expense	\$ 1,022,080	\$ 946,572
Employee Benefit Expense	799,599	672,455
<b>Total Personal Services</b>	<b>1,821,679</b>	<b>1,619,027</b>
<b>Professional Services:</b>		
Actuarial Services	113,141	87,714
Actuarial Audit Services	50,000	0
Audit Expense	30,900	29,400
Disability Program	13,120	15,104
Consultant Fees	56,401	115,022
Fiduciary Insurance	112,280	53,999
Other	31,744	15,403
<b>Total Professional Services</b>	<b>407,586</b>	<b>316,642</b>
<b>Miscellaneous:</b>		
Depreciation	382,008	372,468
Meetings/Travel/Education	85,752	67,366
Equipment/Supplies	38,429	39,127
Printing/Postage	80,238	67,263
Bank Service Charge	8,116	8,105
Building Expenses	43,525	102,238
Other	67,636	66,613
<b>Total Miscellaneous</b>	<b>705,704</b>	<b>723,180</b>
<b>Total Administrative Expenses</b>	<b>\$2,934,969</b>	<b>\$2,658,849</b>

# Supplementary Information

## Schedules Of Investment Expenses

For the Years Ended June 30, 2012 and 2011

	2012	2011
<b>Investment Income Expenses:</b>		
Management and Performance Fees		
Aberdeen Asset Management	\$ 73,610	\$ 159,623
ABRY Partners	334,037	270,974
Acadian Asset Management	684,292	870,319
AEW	252,917	255,266
Albourne	240,000	240,000
Algert Coldiron Investments (ACI)	0	14,475
American Infrastructure MLP	204,949	222,570
Anchorage Capital	334,769	140,724
Apollo Real Estate	298,694	327,364
AQR Capital Management	288,319	266,831
Artio (formerly Julius Baer)	306,437	492,819
Audax Group	99,096	143,185
Barclays Global Investors	195,485	461,695
Black River	70,482	222,249
Brevan Howard	725,868	465,074
Bridgewater Associates	1,221,976	1,922,917
CBRE	361,090	116,440
Cevian	241,340	0
Clifton	85,794	47,079
Colony Capital	52,450	2,500
Concordia	0	5,777
CQS Management	0	66,447
CarVal Investors (CVI)	408,240	375,303
Deephaven Capital Management	3,574	10,155
EIF Management	127,507	152,625
Enhanced Investment Technologies (INTECH)	327,405	329,855
Golub	62,674	0
Grove Street Advisors	2,250,000	3,000,000
GSO	71,482	0
ING Clarion	557,535	447,573
Luxor	158,253	416,354
Natural Gas Partners	351,021	397,817
Och-Ziff Real Estate	128,876	145,313
Ospraie	528,048	262,121
Paulson and Co.	65,358	635,527
PFM	135,769	0
Pinnacle Associates	432,231	304,832
Principal Global Investors	854,471	750,355
RMK Timberland	119,973	153,096
Rothschild Asset Management	82,235	87,590
Silchester International Investors	530,853	597,271
Stark Investments (Shepard)	70,704	151,430
Stellium	604,864	0
Structured Portfolio Management (SPM)	568,436	930,038
Taconic	303,494	683,004
Tortoise	386,907	272,788
Urdang	140,452	188,051
ValueAct	177,770	0
Vectis	187,500	187,500
Vicus Capital	0	19,834
Walker Smith	141,988	0
Western Asset Management Company	282,419	479,154
<b>Total Management and Performance Fees</b>	<b>16,131,644</b>	<b>17,691,914</b>
Investment Custodial Fee	101,295	115,915
Performance Management	95,708	84,837
General Consultant (monitoring) Fee	312,000	225,000
Other Investment Expenses	65,757	421,162
<b>Total Investment Income Expenses</b>	<b>\$16,706,404</b>	<b>\$18,538,828</b>
<b>Securities Lending Expenses:</b>		
Borrower Rebates (Refunds)	\$ (126,553)	\$ 34,609
Bank Fees	89,901	47,144
<b>Total Securities Lending Expenses (Income)</b>	<b>\$ (36,652)</b>	<b>\$ 81,753</b>



# Supplementary Information

## Schedules Of Consultant And Professional Expenses

*For the Years Ended June 30, 2012 and 2011*

	2012	2011
Actuarial Services	\$ 113,141	\$ 87,714
Actuarial Audit Services	50,000	0
Audit Services	30,900	29,400
Disability Administrative Services	13,120	15,104
Legislative Consultant	26,401	26,500
Board Governance Consultant	0	52,896
Customer Service and Benefit Delivery	10,000	29,626
Insurance Consultant	6,000	6,000
Other Consultant Fees	14,000	0
Fiduciary Insurance	112,280	53,999
Other	31,744	15,403
<b>Total Consultant and Professional Expenses</b>	<b><u>\$407,586</u></b>	<b><u>\$316,642</u></b>





Stimulates the Economy



# Chief Investment Officer Report

Scott L. Simon  
Executive Director



Pam Henry  
Assistant Executive Director

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November 20, 2012

To the Members of the MoDOT & Patrol Employees' Retirement System:

It is my pleasure to provide you with the investment section of this year's Comprehensive Annual Financial Report. This section is a supplement to the comprehensive report and provides an overview of developments and performance within the investment portfolio.

Fiscal year 2012 could be described as a tale of two halves. Financial markets traded considerably lower during the first half of the year (July 1 through December 31) over concerns the world economy was headed for a double-dip recession. Several events looked remarkably similar to the 2008/2009 financial crisis, including increased equity market volatility and wide-spread concerns over the health of major banks around the world. U.S. Treasury yields plummeted as investors sold riskier assets in exchange for safety of principal (the "flight to quality" trade). At the midpoint of the fiscal year, global equities had lost 11.5% of their value. MPERS' asset allocation helped to mitigate the market losses, but was still down 2.6% over the same period.

With the turn of the calendar to 2012 and the promise of additional government stimulus to support the economy, the second half of the year looked much brighter. The European Central Bank announced a comprehensive plan to address their sovereign debt issues and pledged to do "whatever was necessary" to keep the Euro intact as a common currency. In the U.S., Federal Reserve Chairman Bernanke announced the Fed would continue to purchase long-term bonds to keep interest rates down (referred to as "Operation Twist"), and pledged to continue the quantitative easing program until the economy reached full employment. Government support seemed to calm investor fears and markets once again started to trend higher. The U.S. housing market provided some additional relief, as it continued to rebound from the lows set in the financial crisis. When the dust settled, MPERS' portfolio fully recovered the losses incurred during the first half, ending fiscal year 2012 with a positive 2.74% return.

Looking forward to fiscal year 2013, the financial markets continue to face a lot of uncertainty. While the U.S. economy continues the gradual healing process, it has yet to show an ability to grow without the assistance of government stimulus programs. The government took on a massive amount of debt over the past few years, and is now forced to determine how to repay this debt and cut back on government spending programs (referred to as the "fiscal cliff"). The issue is even worse in certain international markets, where investors remain concerned that nations such as Spain, Italy, Portugal and Greece will be able to repay their debt at all. The one certainty in the marketplace is the inevitable reduction of government spending, which will be a headwind to economic growth for years to come. The economy will need to find fresh sources of growth to avoid falling into another recession, and those sources have yet to be identified. A low to no-growth economic environment, together with interest rates at or near all-time lows, suggests we should taper down our investment return expectations over the coming cycle.

Fortunately, uncertainty typically leads to opportunities, and MPERS' portfolio is well positioned to capitalize on any opportunity that may arise. The asset allocation approved by the Board of Trustees is diversified across multiple asset classes and designed to perform well across various market environments (not just when the stock market rallies). We continue to build MPERS' internal staffing capabilities, and surround that staff with highly regarded investment consultants to help us successfully navigate through the uncertainty in the marketplace. The investment portfolio continues to mature along with the knowledge level of MPERS' staff, and I truly believe our best years are yet to come.

Sincerely,



Larry Krummen, CFA

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**Telephone Number:** (573) 298-6080 • **Toll Free:** 1-800-270-1271 • **Admin. Fax:** (573) 526-5895 • **Benefits Fax:** (573) 522-6111  
**Website:** [www.mpers.org](http://www.mpers.org) • **E-Mail:** [mpers@modot.mo.gov](mailto:mpers@modot.mo.gov)

# Investment Consultant Report



NEPC, LLC

KEVIN M. LEONARD  
PARTNER

December 12, 2012

The Board of Trustees  
**MoDOT & Patrol Employees' Retirement System**  
PO Box 1930  
Jefferson City, MO 65102

Dear Board Members:

NEPC, LLC has now served as your investment consultant for its first full fiscal year. In our role as the investment consultant, we assist the Board in several manners: determining and executing the overall asset allocation strategy of the Plan; advising on the investment policy of the Plan; facilitating investment manager searches (both traditional and alternative asset classes); conducting custodial service searches; providing ongoing performance evaluation for each individual investment manager and the overall investment portfolio; as well as providing pertinent education to the Board.

MPERS' objective is to provide service, disability, death and vested retirement benefits to members and their beneficiaries. To ensure a solid foundation for the future of the System, MPERS has developed an investment program designed to achieve the actuarially assumed rate of return over the long term, while prudently managing the risk of the portfolio. The pension fund is required to satisfy the need to pay accumulated/earned retirement benefits today, while at the same time be prepared for "uncertain" future benefits. This balancing of short-term versus long-term needs is a key tenant in the overall construction of the portfolio. To facilitate this balance, the Board has adopted a diversified asset allocation structure. Our goal is to diversify the System's assets within the traditional and non-traditional asset classes to reduce volatility, achieve above market returns, and to better protect the portfolio against difficult market conditions.

The Board continues to work diligently on restructuring the alternative investment program, which will further assist in the diversification of the portfolio. Asset classes such as hedge funds are designed to lower the overall volatility of the program, while private equity is designed to provide higher long-term performance above what is expected from traditional equity markets. As the allocation strategy evolves year after year, diversification and risk mitigation will continue to be the pillars of the asset allocation structure.

## **Fiscal Year 2012 Market Review**

Fiscal year 2012 began with global equity markets tumbling, high-yield bonds and other credit sectors selling off, and treasury yields near zero. The Eurozone was in crisis, and the U.S. was politically deadlocked as deficits gapped and long-term growth prospects were muted. Markets turned around in the fourth quarter of 2011, driven by improvements in U.S. economic data. The rally continued into the first quarter of calendar year 2012 with global stock markets all up double digits, as a result of positive events at the European Central Bank, the successful refinancing of a portion of Greece's debt, and the further development of the European Financial Stability Facility.

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Fiscal year 2012 ended much the way it began, with the European debt crisis and global economic issues taking center stage, with fears surrounding the election of the Socialist party in France and with the belief that the Greek political parties would not be able to support the country's austerity driving negative sentiment. Beyond the Eurozone, China announced an official lowering of GDP growth targets. These headlines triggered a sell-off in the global equity markets, effectively reducing the gains experienced in the previous two quarters. Amid this backdrop, treasury yields dropped to all-time lows and the dollar rose relative to most developed and emerging market currencies in a flight to safety.

For the fiscal-year-ending June 30, 2012, the MPERS Total Fund returned 2.75% on a net-of-fees basis. For the trailing three-year period ending June 30, 2012 the MPERS Total Fund returned 12.20% on a net-of-fees basis. For the fiscal-year-ending June 30, 2012 relative to peer group comparison (InvestorForce Public Fund Universe), the 2.75% return ranked MPERS in the 20<sup>th</sup> percentile (1% being the highest, 100% being the lowest), outpacing 80% of other public funds within the universe. For the trailing three-year period ending June 30, 2012 the return of 12.20% ranked MPERS in the 29<sup>th</sup> percentile, outpacing 71% of other public funds within the universe. Total fund performance was driven by strong relative returns within the global equity portfolio and strong absolute and relative returns within the fixed income portfolio. The portfolio's asset allocation structure being underweight global equities (relative to peer group) and overweight alternative investments (relative to peer group) was a key contributor to the positive results for the year. The global equity portfolio returned -5.05% versus its benchmark return of -6.49%. The fixed income portfolio returned 9.26% versus its benchmark return of 7.36%. Within the alternatives portfolio, the private equity portfolio was the strongest performer with a return of 7.40%, followed by the real estate portfolio with a return of 5.15% and finally the hedge fund portfolio with a return of 0.70%. Relative to benchmark, the hedge fund portfolio did the best, outperforming its benchmark by 520 basis points. Both the private equity and real estate portfolios underperformed their benchmarks by 438 basis points and 689 basis points respectively. Underperformance within both portfolios can be attributed to selective manager performance.

NEPC, LLC appreciates the opportunity to "make a difference" while serving as your consultant. It is a pleasure to work with MPERS and we look forward to developing our relationship for the benefit of the Board, staff, and most importantly, the members of the System.

Sincerely,

A handwritten signature in black ink, appearing to read 'K. Leonard', is written over a horizontal line.

Kevin M. Leonard  
Partner



# Investment Activity Overview

## **Summary of Investment Policy**

The primary objective of the Missouri Department of Transportation and Highway Patrol Employees' Retirement System (MPERS) is to provide active and retired employees with the retirement benefits provided under Missouri law. The investment portfolio is constructed to generate a total return that, when added to employer contributions, is sufficient to meet these benefit obligations. Following prudent standards for preservation of capital, the goal is to achieve the highest possible rate of return consistent with the plan's tolerance for risk as determined by the Board of Trustees in its role as fiduciary.

Investment management is delegated to MPERS' staff and external asset managers. The managers operate within the set of guidelines, objectives and constraints set forth in their respective investment management agreement.

## **Market Value of Investments**

As of June 30, 2012, MPERS' investment portfolio had a total market value of \$1.53 billion, down slightly from 2011's total market value of \$1.54 billion. While the fund has a positive investment return of 2.74% for the year, the investment income was not enough to cover the net outflows incurred by the fund. Over the course of the year, \$57 million was transferred out of the fund to meet benefit payments and other obligations, while income from investment activity equated to \$47 million.

## **Investment Performance**

MPERS' investment portfolio returned 2.74% in fiscal year 2012, net of fees and based on time-weighted rates of return and market valuations. Performance for the various sub-asset classes and their respective benchmark indices are listed below.

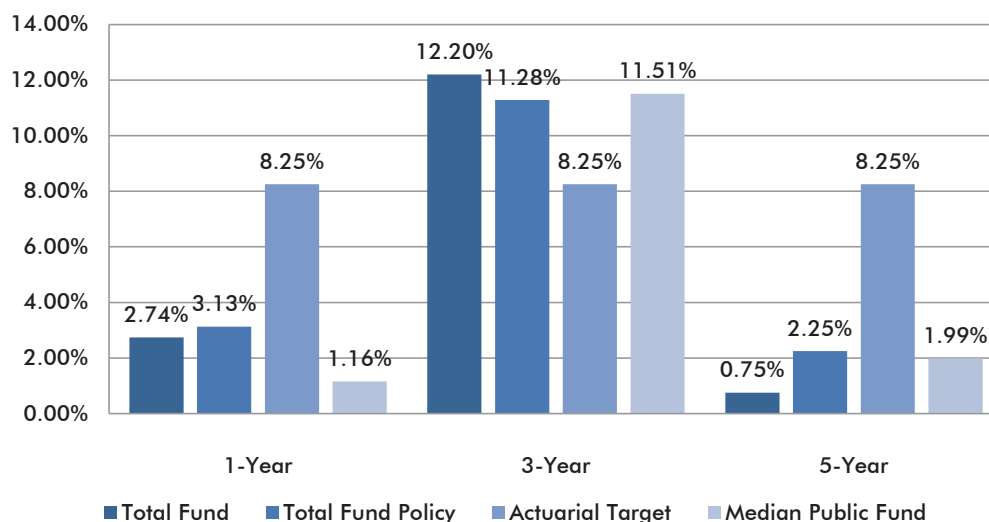
<b>Investment Performance (Including Benchmarks)</b>	<b>1-Year</b>	<b>3-Year</b>	<b>5-Year</b>
<b>Total Fund</b>	<b>2.75%</b>	<b>12.20%</b>	<b>0.75%</b>
Policy Benchmark	3.13	11.28	2.25
<b>Global Equity</b>	<b>-5.08</b>	<b>13.28</b>	<b>-2.79</b>
MSCI ACWI	-6.49	10.80	-2.70
<b>Private Equity</b>	<b>7.38</b>	<b>10.70</b>	<b>19.30</b>
S&P 500 + 300 bps	11.78	27.45	2.25
<b>Fixed Income</b>	<b>9.27</b>	<b>13.38</b>	<b>5.99</b>
Barclays US Universal Index	7.36	7.55	6.76
<b>Real Estate</b>	<b>5.15</b>	<b>5.27</b>	<b>-2.64</b>
NCREIF Property Index	12.04	8.81	2.50
<b>Hedge Funds</b>	<b>0.70</b>	<b>7.07</b>	<b>2.69</b>
HFRI Fund of Funds Index	-4.49	2.17	-2.04

# Investment Activity Overview

When measuring performance, the Board of Trustees looks at three primary performance objectives: a) to meet or exceed the actuarial assumed rate of return of 8.25%, b) to outperform a policy benchmark that represents the return that could be achieved by investing passively in the broad markets in the same percentages

to MPERS' target asset allocation, and c) to rank at or above the median public fund investment return.

Historical returns versus the three primary performance goals are listed graphically below:



Fiscal year 2012 was a relatively flat year overall for MPERS' investment portfolio, as financial markets took a pause after two years of strong performance. The fund earned 2.74% for the year, led by the fixed income portfolio which generated a 9.3% return. The private equity portfolio generated a 7.4% return, followed by real assets at 5.2%, and the hedge fund portfolio at 0.7%. MPERS' global equity portfolio was the only asset class to finish the year with a negative return, but outperformed its benchmark by realizing a -5.1% return. The fund's ability to generate a positive return in a year when the broad equity market lost 6.5% of its value highlights the recent efforts to diversify the portfolio and reduce the dependence on equity markets to generate returns.

The fund continues to lag the policy benchmarks and peer universe over the five year period, primarily due to the poor performance during the financial crisis (fiscal year 2009).

## Asset Allocation Overview

MPERS' asset allocation targets were unchanged in fiscal year 2012, as the current targets were recently modified by the Board of Trustees in June 2010. While the majority of transitioning to the new targets took place in fiscal year 2011, there were a few notable movements to the actual allocations that are explained in more detail below. As of June 30, 2012, all of the sub-asset class allocations were within the acceptable ranges established by MPERS' investment policy. Any deviance relative to the targeted allocation represents a conscious decision based on our views of the market.

While the one and five-year returns failed to meet the actuarial return hurdle of 8.25%, MPERS' three-year performance of 12.2% remains safely above the actuarial target. As of June 30, 2012, the portfolio ranked in top 20% of the peer universe for the one-year period, and in the top 29% of the peer universe over the three-year

The chart below lists the target and actual asset allocation within the overall portfolio as of June 30, 2012, followed by commentary on each underlying asset class.

Asset Class	Ending FY11 Allocation	FY12 Target Allocation	Ending FY12 Allocation
Global Equity	31.5%	30%	29.5%
Private Equity	15.8%	15%	19.3%
Fixed Income	23.0%	25%	23.2%
Real Estate*	17.0%	15%	16.9%
Hedge Funds	11.1%	15%	10.8%
Cash	1.6%	0%	0.3%

\* Including Timber, which was rolled into the overall Real Estate Allocation on 4/1/07.

# Investment Activity Overview

## **Global Equity Allocation:**

We began the year with a 31.5% allocation to global equities, slightly above the targeted allocation of 30%. We maintained a relatively neutral position relative to targets throughout the year, primarily due to the increased uncertainty and volatility in the equity markets. MPERS closed the year with a 29.5% allocation to global equities, slightly below targets.

We also monitor MPERS' total equity exposure, which factors in both the public and private equity portfolios. From this perspective, MPERS maintained an overweight position throughout most of the fiscal year due to an overweight position in the private equity portfolio.

Overall the global equity portfolio generated a negative 5.1% return during fiscal year 2012, outperforming the broad equity benchmark which lost 6.5% during the period.

## **Fixed Income Allocation:**

We began fiscal year 2012 with a 23.0% allocation to fixed income relative to the 25% target. We maintained this underweight position throughout the fiscal year, ending with a 23.1% allocation. With interest rates at or near all time lows, we continue to favor certain income-oriented real estate strategies versus traditional fixed income strategies.

The fixed income portfolio performed very well relative to the benchmark throughout the year, generating a 9.27% return versus the index return of 7.36%. The long duration and inflation protection (TIPS) portfolios did exceptionally well, generating 13.7% and 13.2% returns, respectively.

## **Hedge Fund Allocation:**

MPERS' remained considerably underweight relative to the targeted hedge fund allocation of 15% throughout the year, starting the year with an 11.1% allocation and ending with a 10.8% allocation. The underweight is based on an overall limit of 50% to alternative strategies (includes hedge funds, private equity and real assets). We continue to find more attractive opportunities in the real asset and private equity portfolios relative to the hedge fund sector.

We made a number of changes to the manager lineup throughout the year, adding two activist equity strategies and a commodity trading advisor (CTA) strategy. The hires were offset by liquidating investments from underperforming managers. Overall the portfolio generated a relatively flat return of 0.7% during the year, but considerably outperformed the benchmark which lost 4.5% over the same period.

## **Real Estate Allocation:**

MPERS maintained a 2% overweight to real asset strategies throughout fiscal year 2012, starting at 17.0% and ending at 16.9% (relative to a 15% target). The majority of the overweight is based on the view that certain core real estate strategies will outperform traditional core fixed income markets over the coming cycle. While that trade did not generate incremental return over the past year (both core real estate and core fixed income portfolios were up 6.8% for the year), we continue to believe this strategy will work over the years to come.

The portfolio struggled to keep up with the performance of the NCREIF benchmark in fiscal year 2012, generating a 5.15% return versus a benchmark return of 12.04%. MPERS' real asset portfolio includes a wide mix of strategies, including a number of publicly traded strategies that struggled over the past year with the falling equity markets. The NCREIF Property Index is a pure, private real estate benchmark that continues to rebound off the lows set during the financial crisis and is less sensitive to movements in the broad equity markets. The Board of Trustees is scheduled to review the real assets portfolio in fiscal year 2013 and will determine whether the NCREIF Property Index is the most appropriate benchmark going forward.

## **Private Equity Allocation:**

MPERS' private equity allocation increased from 15.8% of assets to 19.3% of assets during the course of fiscal year 2012, versus the target of 15%. The portfolio generated a very respectable 7.38% return for the year, but once again trailed the benchmark return due to timing-related issues. The "public equity plus" benchmark (S&P 500 + 3%) for the private equity portfolio remains extremely difficult to outperform given the relative immaturity of the portfolio (we are just beginning to see meaningful distributions out of the portfolio since our initial investments in 2005). The underlying companies within the private equity portfolio continue to perform well, and we expect the performance of the sector to improve as the portfolio matures and the initial public offering (IPO) market improves.

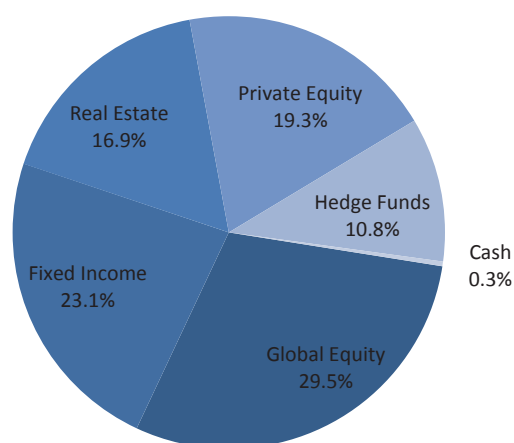
## **Looking Forward:**

Looking forward to fiscal year 2013, the financial markets will continue to face a lot of uncertainty. The U.S. Government took on a massive amount of debt during the financial crisis to support the economy, and is now forced to determine how to repay this debt and cut back on government spending programs (referred to as the "fiscal cliff"). European markets continue to work through sovereign debt issues in countries like Spain, Italy, Portugal

# Investment Summary

and Greece. The one certainty in the marketplace is that the reduction of government spending will be a significant headwind to economic growth for years to come, and the economy will need to find fresh sources of growth to avoid falling into another recession. The slow growing economy, together with interest rates at or near all-time lows, suggests fiscal year 2013 returns will probably look similar to fiscal year 2012.

The portfolio is relatively stable in terms of asset allocation initiatives. We have worked diligently to reduce the equity market risk in the portfolio and diversify the fund across multiple asset classes. While there will certainly be additional changes to the allocation in the future, I expect they will be relatively minor compared to movements in the past.



## Amounts Reported By Management-Type Allocation

	06/30/11		Acquisitions	Dispositions	06/30/12		% of Market
	Book Value	Market Value			Book Value	Market Value	
Global Equity	408,060,053	486,757,704	50,715,348	(51,852,472)	406,922,929	450,436,719	29.5%
Private Equity	246,333,726	244,235,096	76,479,388	(33,383,932)	289,429,182	294,861,218	19.3%
Fixed Income	311,128,654	353,287,430	249,068,627	(240,675,245)	319,522,036	353,816,568	23.2%
Real Estate**	290,559,064	262,909,644	34,360,444	(41,844,664)	283,074,844	258,989,106	16.9%
Hedge Funds	140,446,776	172,145,791	43,768,247	(42,163,305)	142,051,718	164,647,782	10.8%
Cash	25,052,058	25,052,058	37,685,761	(57,423,954)	5,313,865	5,313,839	0.3%
Total Investments	1,421,580,331	1,544,387,723	492,077,815	(467,343,572)	1,446,314,574	1,528,065,232	100.0%

### Reconciliation to Statement of Plan Net Assets:

Less Accrued Investment Interest and Income	(3,763,748)
Less Investment Sales Receivable	(6,675,816)
Plus Investment Purchases Payable	9,870,742
Currency Adjustment	5,879,567
	<u>1,533,375,977</u>

\*\* Timber was rolled into the overall Real Estate allocation on 4/1/2007.

# Largest Investment Holdings

## Largest Equity Securities

(Non-Commingled Funds)

Security	Market Value	% of Total
EXXON MOBIL CORP COM	\$3,892,408	0.857%
APPLE INC COM STK	3,153,600	0.694%
INTERNATIONAL BUSINESS MACHS CORP COM	2,444,750	0.538%
AT&T INC COM	2,036,614	0.448%
CHEVRON CORP COM	2,026,444	0.446%
REGENERON PHARMACEUTICALS INC COM	1,679,034	0.370%
CUMMINS INC	1,589,324	0.350%
LAM RESH CORP COM	1,544,510	0.340%
PRECISION CASTPARTS CORP COM	1,480,410	0.326%
LAS VEGAS SANDS CORP COM STK	1,335,143	0.294%

## Largest Fixed Income Securities

(Non-Commingled Funds)

Par Value	Security	Market Value
\$14,000,000	USA TREASURY NTS 1.125% TIPS 15/1/21 USD1000 01-15-2021	\$16,942,097
15,000,000	FED NATL MTG ASSOC 5.25 DUE 08-01-2012	15,060,180
15,000,000	FNMA PRIN STRIP SER 1-PRIN PMT ON 9% 2019 CAP DEB 02-01-2019 (UNDDATE) REG	12,427,935
10,000,000	USA TREASURY NTS TIPS DTD 00340 04-15-2016	10,847,520
10,350,000	WESTERN CORPORATE FEDERAL CREDIT UN SUB NT FLTGT RESTRTD 1.75 DUE 11-02-2012 BEO	10,403,251
10,000,000	FNMA DTD 11/27/2009 3.97 11-27-2019/02-27-2013	10,128,500
6,000,000	UNITED STATES TREAS BDS INDEX LINKED 1.75 DUE 01-15-2028 REG	8,254,497
6,000,000	GNMA SER 2011-19 CL JD 4 DUE 02-20-2041	6,639,078
4,000,000	UNITED STATES TREAS BDS DTD 02/15/2006 4.5% DUE 02-15-2036 REG	5,372,500
5,000,000	FL HURRICANE CATASTROPHE FD FIN COR FLTGRATE NTS-SER A 10-15-2012/04-15-2010BEO	5,001,700
5,000,000	PVTPL ARMY HAW FAMILY HSG I-C TR 2005I-CTR CTF 144A 5.524 DUE 06-15-2050BEO	4,977,000
5,000,000	CREDIT SUISSE FIRST BOSTON MTG SECS CORP2005-C4 MTG PASSTHRU CTF CL B 15 AUG 38	4,610,675
7,000,000	CMO COMMERCIAL MTG TR 2007-GG9 CL AJ FLTRT DUE 03-10-2039 BEO	4,480,084
3,812,000	GNMA 2011-046 REMIC PASSTHRU CTF CL QL 4DUE 03-20-2041	4,269,554
30,658,445	I/O CMO J P MORGAN CHASE COMML MTG SECS TR 2010-C 08-05-2032 BEO	4,082,785

Space and cost restrictions make it impractical to print the entire investment portfolio in this report. However, a portfolio listing is available for review in the office of the executive director of MPERS.



# Schedule of Investment Expenses

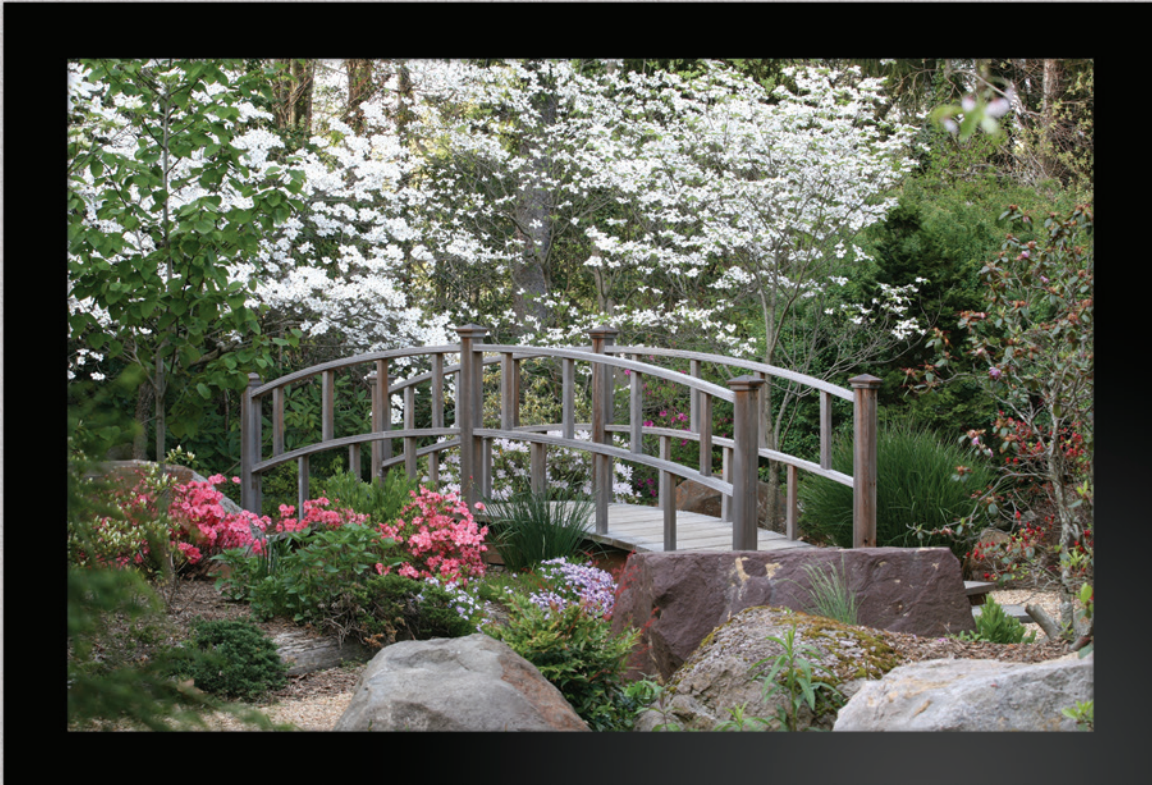
	Market Value of Assets Under Management at 6/30/12	Fees Accrued During FY12
<b>Management and Performance Fees:</b>		
Cash	\$ 5,313,687	\$ 0
Cash/S&P 500 Futures	20,123,038	0
Internal Fixed Income	71,810,055	0
Internal US Tips	36,044,114	0
NT Gov Credit	20,893,241	0
Recoverable Taxes	46,266	0
Aberdeen Asset Management	23,728,820	73,610
ABRY Partners	19,025,508	334,037
Acadian Asset Management	89,394,121	684,292
AEW	13,383,248	252,917
Albourne	0	240,000
American Infrastructure MLP	23,208,078	204,949
Anchorage Capital	9,416,611	334,769
Apollo Real Estate	14,629,032	298,694
AQR Capital Management	19,660,204	288,319
Artio (formerly Julius Baer)	33,547,684	306,437
Audax Group	4,324,794	99,096
Barclays Global Investors	100,652,569	195,485
Black River	0	70,482
Brevan Howard	14,560,134	725,868
Bridgewater Associates	14,767,744	1,221,976
CBRE	34,307,039	361,090
Cevian	10,710,300	241,340
Clifton	0	85,794
Colony Capital	2,784,700	52,450
Concordia	399,250	0
CarVal Investors (CVI)	35,636,782	408,240
Deephaven Capital Management	312,327	3,574
EIF Management	7,176,521	127,507
Enhanced Investment Technologies (INTECH)	99,234,158	327,405
Golub	13,136,907	62,674
Grove Street Advisors	214,934,279	2,250,000
GSO	14,532,267	71,482
ING Clarion	58,875,443	557,535
Luxor	14,898,856	158,253
Natural Gas Partners	21,520,136	351,021
Och-Ziff Real Estate	8,831,000	128,876
Ospraie	13,103,458	528,048
Paulson and Co.	0	65,358
PFM	8,556,354	135,769
Pinnacle Associates	40,290,121	432,231
Principal Global Investors	94,929,244	854,471
RMK Timberland	14,765,206	119,973
Rothschild Asset Management	42,641,852	82,235
Silchester International Investors	71,442,164	530,853
Stark Investments (Shepard)	3,317,845	70,704
Stellium	10,940,353	604,864
Structured Portfolio Management (SPM)	11,310,219	568,436
Taconic	22,191,457	303,494
Tortoise	53,063,211	386,907
Urdang	16,391,271	140,452
ValueAct	10,534,528	177,770
Vectis	6,143,770	187,500
Vicis Capital	1,013,446	0
Walker Smith	8,766,797	141,988
Western Asset Management Company	32,155,768	282,419
<b>Total Management And Performance Fees</b>	<b>\$ 1,533,375,977</b>	<b>16,131,644</b>
<b>Other Investment Expenses:</b>		
Investment Custodial Fee		101,295
Performance Management		95,708
General Consultant (Monitoring) Fee		312,000
Other Investment Expenses		65,757
<b>Total Investment Income Expenses</b>		<b>\$ 16,706,404</b>
<b>Securities Lending Expenses:</b>		
Borrower Rebates		(\$ 126,553)
Bank Fees		89,901
<b>Total Securities Lending Expenses</b>		<b>(\$ 36,652)</b>

# Schedule of Brokerage Commissions

Brokerage Firm	Total Commission	Number of Shares	Commission Rate
BNY ESI SECURITIES CO.	22,017	513,816	0.0428
JEFFERIES & COMPANY	12,910	1,238,088	0.0104
KNIGHT EQUITY MARKETS LP	11,923	685,726	0.0174
DEUTSCHE BANK SECURITIES INC	11,543	4,213,242	0.0027
NORTHERN TRUST CO	10,811	318,207	0.0340
CREDIT SUISSE FIRST BOSTON CORPORATION	9,309	2,739,672	0.0034
ROSENBLATT SECURITIES LLC 501	7,360	412,336	0.0178
CAP INSTITUTIONAL SERVICES INC	7,030	362,106	0.0194
CITATION GROUP	6,069	131,396	0.0462
INSTINET	5,089	295,836	0.0172
UBS WARBURG LLC	4,445	7,437,501	0.0006
LYNCH JONES & RYAN	4,373	352,363	0.0124
MERRILL LYNCH PIERCE FENNER & SMITH	4,311	2,236,091	0.0019
WEEDEN AND & CO	3,828	210,837	0.0182
MACQUARIE CAPITAL SECURITIES LIMITE	3,320	2,543,869	0.0013
STIFEL NICOLAUS AND COMPAN	3,305	30,371,506	0.0001
ROBERT W BAIRD & CO NYK	3,027	79,712	0.0380
MERRILL LYNCH FENNER & SMITH INC	2,407	940,237	0.0026
BARCLAYS CAPITAL LE	2,288	166,780	0.0137
BERNSTEIN, SANFORD C. & CO	2,066	96,799	0.0213
BEAR STEARNS 57079	2,048	58,004	0.0353
GOLDMAN, SACHS AND CO.	2,026	331,401	0.0061
GUZMAN & COMPANY	1,915	121,576	0.0158
JPMORGAN SECURITIES (ASIA PACIFIC)	1,679	554,197	0.0030
RAYMOND JAMES	1,637	37,190	0.0440
MKM PARTNERS	1,606	53,544	0.0300
ROBERT W. BAIRD & COMPANY INC MILWAUKEE USA	1,577	619,724	0.0025
DEUTSCHE BANK SECURITIES INC.	1,437	457,492	0.0031
UBS SECURITIES ASIA LIMITED	1,437	417,031	0.0034
MERRILL LYNCH AND CO., INC.	1,424	54,595	0.0261
CREDIT SUISSE SECURITIES (USA) LLC	1,390	132,310	0.0105
LIQUIDNET INC	1,315	87,665	0.0150
CITIGROUP GLOBAL MARKETS INC/SMITH BARNEY	1,306	112,762	0.0116
SCOTT & STRINGFELLOW INVESTMENT	1,293	32,323	0.0400
MORGAN STANLEY AND CO., LLC	1,248	142,225	0.0088
GUZMAN AND COMPANY	1,222	80,420	0.0152
WACHOVIA CAPITAL MARKETS 46171	1,220	52,563	0.0232
RAYMOND, JAMES & ASSOCIATES, INC.	1,215	33,300	0.0365
INVEMED ASSOCIATES INC.	1,185	23,700	0.0500
CITIGROUP GLOBAL MARKETS INC.	1,132	236,769	0.0048
MCDONALD AND COMPANY/KEYBANC	1,067	1,364,685	0.0008
GOLDMAN SACHS & COMPANY	1,032	39,928,218	0.0000
ISI GROUP INC.	1,020	25,492	0.0400
KEEFE BRUYETTE AND WOODS INC.	1,018	25,441	0.0400
OTHERS (120 firms less than \$1,000 each)	18,106	862,872,358	0.0000
<b>TOTAL</b>	<b>188,986</b>	<b>963,201,105</b>	
<b>AVERAGE COMMISSION RATE</b>			<b>0.0002</b>

# Notes





Important Source of  
Retirement Income



# Actuary's Certification Letter



Gabriel Roeder Smith & Company  
Consultants & Actuaries

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November 16, 2012

The Retirement Board  
Missouri Department of Transportation  
and Highway Patrol Employees' Retirement System  
P.O. Box 1930  
Jefferson City, Missouri 65102-1930

Dear Board Members:

This report was prepared at the request of the Board and is intended for use by the Retirement System and those designated or approved by the Board. This report may be provided to parties other than the System only in its entirety and only with the permission of the Board. This report should not be relied on for any purpose other than the purpose described.

The basic financial objective of the Missouri Department of Transportation and Highway Patrol Employees' Retirement System (MPERS) is to establish and receive contributions which:

- (1) when expressed in terms of percents of active member payroll, will remain approximately level from generation to generation of Missouri citizens, and
- (2) when combined with present assets and future investment returns, will be sufficient to meet the present and future financial obligations of MPERS.

In order to measure progress toward this fundamental objective, MPERS has annual actuarial valuations performed. The valuations (i) measure present financial position, and (ii) establish contribution rates that provide for the current cost and level percent-of-payroll amortization of unfunded actuarial liabilities over a reasonable period. An actuarial valuation was performed based upon benefit conditions, data and assumptions as of June 30, 2012. This valuation indicates that contribution rates for the period beginning July 1, 2013 that are at least equal to the calculated contributions rates will meet the Board's financial objective. The calculated contribution rates are 54.25% of payroll for the 6,243 Non-Uniformed employees and 55.23% of payroll for the 1,215 Uniformed patrol employees.

The plan administrative staff provides the actuary with data for the actuarial valuation. The actuary relies on the data after reviewing it for internal and year to year consistency. Member data was not otherwise audited by the actuary. The actuary summarizes and tabulates population data in order to analyze longer term trends. We are not responsible for the accuracy or completeness of the data provided by MPERS.



# Actuary's Certification Letter

The Retirement Board  
Missouri Department of Transportation  
and Highway Patrol Employees' Retirement System  
November 16, 2012  
Page 2

Gabriel, Roeder, Smith & Company was responsible for the following schedules found in the Actuarial Section:

- Summary of Actuarial Assumptions and Methods
  - Probabilities of Separation From Active Employment
  - Individual Salary Increases
  - Joint Life Retirement Values
  - Probabilities of Retirement for Members
  - Probabilities of Disability for Members
- Summary of Member Data Included in Valuations
- Active Members by Attained Age and Years of Service
- Schedule of Active Member Valuation Data
- Solvency Test
- Derivation of Financial Experience (Gain/Loss)
- Schedule of Retirees and Beneficiaries Added and Removed
- Summary of Plan Provisions

Actuarial valuations are based upon assumptions regarding future activity in specific risk areas including the rates of investment return and payroll growth, eligibility for the various classes of benefits, and longevity among retired lives. These assumptions are adopted by the Board after considering the advice of the actuary and other professionals. The assumptions and the methods comply with the requirements of Statements No. 25 and No. 43 of the Governmental Accounting Standards Board. Each actuarial valuation takes into account all prior differences between actual and assumed experience in each risk area and adjusts the contribution rates as needed. Actuarial methods and assumptions were adopted by the Board pursuant to the June 30, 2009 Experience Study.

To the best of our knowledge, this report is complete and accurate and was made in accordance with standards of practice promulgated by the Actuarial Standards Board of the American Academy of Actuaries. The actuarial assumptions used for the valuation produce results which, individually and in the aggregate, are reasonable.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law.

# Actuary's Certification Letter

The Retirement Board  
Missouri Department of Transportation  
and Highway Patrol Employees' Retirement System  
November 16, 2012  
Page 3

This report has been prepared by actuaries who have substantial experience valuing public employee retirement systems. Heidi Barry is a Member of the American Academy of Actuaries (MAAA) and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

**Based upon the valuation results, it is our opinion that the Missouri Department of Transportation and Highway Patrol Employees' Retirement System continues to operate in accordance with actuarial principles of level percent-of-payroll financing. It is important to the well-being of the system that it continues to receive contributions at the actuarially determined levels. It is also important to continue to monitor both the total funded status and the funded status of the retiree liabilities to ensure that the funding policy is consistent with the expected life span of the respective unfunded obligation.**

Respectfully submitted,



Heidi G. Barry, ASA, MAAA



Kenneth G. Alberts

Gabriel Roeder Smith & Company

# Summary of Actuarial Methods and Assumptions

Valuation Date: ..... June 30, 2012  
Actuarial Cost Method: ..... Entry Age  
Amortized Method: ..... Closed, level percent of payroll  
Remaining Amortization Period: ..... 20 years (single equivalent period)  
Asset Valuation Method: ..... 3-year smoothing  
Actuarial Assumptions:  
    Investment Rate of Return: ..... 8.25%  
    Projected Salary Increase: ..... 3.75% to 12.25%  
    Cost-of-Living Adjustments: ..... 2.6% Compound  
    Includes Wage Inflation at: ..... 3.75%

An actuarial valuation is based upon an actuarial cost method, an asset valuation method, and actuarial assumptions. These methods and assumptions are chosen by the Board of Trustees after consultation with the Actuary and other advisors.

The actuarial cost method is called the Entry Age Actuarial Cost Method. This method is consistent with the Board's level percent of payroll funding objective. With this method, the level percent of payroll is determined that will fund a member's retirement benefit over the member's entire working lifetime, from date of hire (Entry Age) to date of exit from the active member population. Differences in the past between assumed and actual experience become part of unfunded actuarial accrued liabilities and are amortized with level percent of payroll contributions. This cost method was first used in the **June 30, 1999** valuation.

The asset valuation method is a three year smoothed market value method in which assumed investment return is recognized immediately each year and differences between actual and assumed investment return are phased in over a closed three year period. This asset valuation method is intended to give recognition to the long term accuracy of market values while filtering out and dampening short term market swings. This method was first used in the **June 30, 1999** valuation.

The actuarial assumptions used in producing the valuation fall into two broad classes: economic assumptions, and demographic assumptions. Economic assumptions refer to long term rates of investment return, wage growth, covered population growth, and inflation. Demographic assumptions refer to retirement rates, turnover rates, disability rates, merit and seniority pay increases, and mortality rates. The current assumptions are based upon a 2004-2009 study of experience of the MPERS. The assumptions are reviewed from time to time to keep them reasonably current with expected experience.

## **Economic Assumptions**

**The investment return rate** used in making the valuation was 8.25% per year, compounded annually (net after administrative expenses). This rate of return is not the assumed real rate of return. The real rate of return over wage inflation is defined to be the portion of investment return which is more than the wage inflation rate. Considering wage inflation recognition of 3.75%, the 8.25% rate translates to an assumed real rate of return over wage inflation of 4.5%. This rate was first used for the **June 30, 2005** valuation.

# Summary of Actuarial Methods and Assumptions

**Pay increase assumptions** for individual active members are shown on page 47. Part of the assumption for each age is for a merit and/or seniority increase, and the other 3.75% recognizes wage inflation. These rates were first used for the **June 30, 2010** valuation.

**Price Inflation** is assumed to be 3.25%. This results in a 2.6% annual COLA assumption. It is assumed that the 2.6% COLA will always be paid.

The Active Member Group size is assumed to remain constant at its present level.

**The active member payroll** for MoDOT members is assumed to increase 0.00% annually in each of the first two years and 3.75% annually thereafter. The active member payroll for all other members is assumed to increase 3.75% annually for all years.

## **Non Economic Assumptions**

**The mortality table** used to measure retired life mortality was the 1994 Group Annuity Mortality Tables projected to the year 2002 set forward 2 years for males and set back 3 years for females. Related values are shown on page 47. This table was first used for the **June 30, 2010** valuation. Disabled pension mortality was based on PBGC Disabled Mortality tables. There is no margin for future mortality improvements in the rates.

**The probabilities of retirement** for members eligible to retire are shown on page 48. The rates for full retirement were first used in the **June 30, 2010** valuation. The rates for reduced retirement were first used in the **June 30, 2010** valuation. Upon retirement, members are assumed to pick the BackDROP period that when combined with the remaining annuity produces the highest liability.

**The probabilities of disability** for members eligible to retire are shown on page 48. The rates for disability were first used in the **June 30, 2010** valuation.

**The probabilities of withdrawal** from service, death in service and disability are shown for sample ages on page 46. The death-in-service and disability rates were first used in the **June 30, 2010** valuation. The withdrawal rates were first used in the **June 30, 2010** valuation.

**The data about persons now covered and about present assets** was furnished by the System's administrative staff. Although examined for general reasonableness, the data was not audited by the Actuary. Data was furnished as of May 31 and assumed to be statistically equivalent to June 30.

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The actuarial valuation computations were made by or under the supervision of a Member of the American Academy of Actuaries (MAAA).

# Summary of Actuarial Methods and Assumptions

## Probabilities of Separation From Active Employment Less Than 5 Years of Service

Service	MoDOT, Civilian Patrol and MPERS		Uniformed Patrol	
	Male	Female	Male	Female
0-1	30.00%	19.00%	14.00%	14.00%
1-2	16.00	13.00	6.50	6.50
2-3	8.00	9.00	3.50	3.50
3-4	6.50	8.00	3.00	3.00
4-5	5.00	5.00	3.00	3.00

## Probabilities of Separation From Active Employment More Than 5 Years of Service

Age	MoDOT, Civilian Patrol and MPERS		Uniformed Patrol	
	Male	Female	Male	Female
25	4.93%	5.10%	3.14%	3.14%
30	4.39	5.10	2.75	2.75
35	3.53	4.59	2.09	2.09
40	2.75	3.74	1.43	1.43
45	2.06	2.89	0.88	0.88
50	1.51	2.04	0.44	0.44
55	1.10	1.19	0.17	0.17
60	0.89	0.34	0.11	0.11



# Summary of Actuarial Methods and Assumptions

## Salary Increase Assumptions For an Individual Member

### Age Based Salary Scale

Age	MoDOT, Civilian Patrol and MPERS			Uniformed Patrol		
	Merit & Seniority	Base (Economic)	Increase Next Year	Merit & Seniority	Base (Economic)	Increase Next Year
20	8.00%	3.75%	11.75%	8.50%	3.75%	12.25%
25	5.66	3.75	9.41	6.16	3.75	9.91
30	3.30	3.75	7.05	3.80	3.75	7.55
35	2.05	3.75	5.80	2.55	3.75	6.30
40	1.45	3.75	5.20	1.95	3.75	5.70
45	0.95	3.75	4.70	1.45	3.75	5.20
50	0.60	3.75	4.35	1.10	3.75	4.85
55	0.38	3.75	4.13	0.88	3.75	4.63
60	0.30	3.75	4.05	0.80	3.75	4.55

## Joint Life Retirement Values (8.25% Interest)

Sample Attained Ages	Present Value of \$1 Monthly for Life		Future Life Expectancy (years)	
	Men	Women	Men	Women
50	\$138.16	\$139.94	30.74	35.46
55	132.93	135.21	26.15	30.74
60	126.10	128.78	21.80	26.15
65	117.68	120.49	17.81	21.80
70	107.46	110.39	14.17	17.81
75	95.15	98.34	10.86	14.17
80	81.33	84.21	8.04	10.86

The present values shown above are for illustrative purposes only and include a 50% survivor benefit but do not include the value of future post-retirement increases. Males are assumed to be 3 years older than their spouses.

# Summary of Actuarial Methods and Assumptions

## Percent of Eligible Active Members Retiring Next Year (Rates of Retirement)

Age	MoDOT, Civilian Patrol and MPERS				Uniformed Patrol	
	Male		Female		Male	Female
	Normal	Early	Normal	Early	Normal	
50	30.00%	0.00%	30.00%	0.00 %	40.00%	40.00%
55	20.00	3.00	30.00	3.00	25.00	25.00
60	20.00	10.00	20.00	5.00	100.00	100.00
65	40.00	0.00	40.00	0.00	100.00	100.00
70	50.00	0.00	50.00	0.00	100.00	100.00

## Percent of Members Becoming Disabled at the Indicated Age (Rates of Disability)

Age	MoDOT, Civilian Patrol and MPERS		Uniformed Patrol	
	Male	Female	Male	Female
25	0.02%	0.05%	0.01%	0.01%
30	0.03	0.10	0.02	0.02
35	0.06	0.14	0.02	0.02
40	0.10	0.19	0.05	0.05
45	0.23	0.32	0.09	0.09
50	0.42	0.42	0.19	0.19
55	0.54	0.66	0.35	0.35
60	1.00	0.90	0.58	0.58

# Summary of Member Data Included In Valuations

	Civilian Patrol	MoDOT and MPERS	Non-Uniformed Total	Uniformed Patrol	Grand Total
<b>Active Members</b>					
Closed Plan	499	2,822	3,321	721	4,042
Year 2000 Plan (also closed)	538	2,287	2,825	413	3,238
Year 2000 Plan - 2011 Tier (open)	91	6	97	81	178
Total Active Members	1,128	5,115	6,243	1,215	7,458
Total Active Members Prior Year	1,146	5,872	7,018	1,213	8,231
<b>Retiree - Regular Pensioners</b>					
Closed Plan	437	3,701	4,138	825	4,963
Year 2000 Plan (also closed)	413	2,502	2,915	1	2,916
Year 2000 Plan - 2011 Tier (open)	0	0	0	0	0
Total Regular Pensioners	850	6,203	7,053	826	7,879
Self Insured Disability Pensioners	5	58	63	3	66
Fully Insured Disability Pensioners	12	95	107	3	110
Terminated Vested Members	225	1,641	1,866	159	2,025
<b>Total</b>	<b>2,220</b>	<b>13,112</b>	<b>15,332</b>	<b>2,206</b>	<b>17,538</b>
Active Member Valuation Payroll	\$42,605,045	\$213,982,134	\$256,587,179	\$72,705,989	\$329,293,168
Active Member Valuation Payroll Prior Year	\$42,793,273	\$246,425,127	\$289,218,400	\$72,420,601	\$361,639,001
Unfunded Actuarial Accrued Liability	N/A	N/A	\$1,362,414,960	\$412,830,098	\$1,775,245,058

Member data for actuarial valuation is as of May 31, 2012

# Active Members By Attained Age and Years of Service

## MoDOT and MPERS

### Closed Plan

Attained Age	Counted by Complete Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30+	No.	Valuation Payroll
Under 20	-	-	-	-	-	-	-	0	\$0
20-24	-	-	-	-	-	-	-	0	0
25-29	-	-	-	-	-	-	-	0	0
30-34	-	-	51	1	-	-	-	52	1,933,634
35-39	-	-	161	96	-	-	-	257	11,461,755
40-44	-	1	122	294	93	3	-	513	24,086,778
45-49	-	3	104	191	221	139	4	662	31,383,665
50-54	-	-	93	163	169	265	62	752	35,791,361
55-59	-	-	54	112	107	75	48	396	17,934,832
60-64	-	1	34	50	34	25	15	159	7,198,958
65-69	-	-	3	7	10	3	3	26	1,110,552
70+	-	-	1	-	3	-	1	5	235,076
<b>Totals</b>	<b>0</b>	<b>5</b>	<b>623</b>	<b>914</b>	<b>637</b>	<b>510</b>	<b>133</b>	<b>2,822</b>	<b>\$131,136,611</b>

Average Age  
 Average Service  
 Average Pay

48.7 years  
 20.2 years  
 \$46,469

### Year 2000 Plan

Attained Age	Counted by Complete Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30+	No.	Valuation Payroll
Under 20	-	-	-	-	-	-	-	0	\$0
20-24	29	3	-	-	-	-	-	32	933,149
25-29	146	127	-	-	-	-	-	273	9,956,494
30-34	88	267	86	-	-	-	-	441	17,205,801
35-39	110	176	92	-	-	-	-	378	13,943,277
40-44	102	141	70	-	-	-	-	313	10,863,494
45-49	70	136	78	-	-	-	-	284	9,990,440
50-54	78	139	75	1	1	-	-	294	10,181,006
55-59	42	104	41	1	1	-	-	189	6,656,037
60-64	9	39	14	1	-	-	-	63	2,142,254
65-69	2	10	5	2	-	-	-	19	768,998
70+	-	1	-	-	-	-	-	1	29,418
<b>Totals</b>	<b>676</b>	<b>1,143</b>	<b>461</b>	<b>5</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2,287</b>	<b>\$82,670,368</b>

Average Age  
 Average Service  
 Average Pay

41.1 years  
 7.1 years  
 \$36,148

Member data for actuarial valuation is as of May 31, 2012.

# Active Members By Attained Age and Years of Service

## MoDOT and MPERS

Year 2000 Plan - 2011 Tier

Attained Age	Counted by Complete Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30+	No.	Valuation Payroll
Under 20	-	-	-	-	-	-	-	0	\$0
20-24	2	-	-	-	-	-	-	2	65,195
25-29	2	-	-	-	-	-	-	2	54,787
30-34	-	-	-	-	-	-	-	0	0
35-39	-	-	-	-	-	-	-	0	0
40-44	1	-	-	-	-	-	-	1	27,508
45-49	1	-	-	-	-	-	-	1	27,665
50-54	-	-	-	-	-	-	-	0	0
55-59	-	-	-	-	-	-	-	0	0
60-64	-	-	-	-	-	-	-	0	0
65-69	-	-	-	-	-	-	-	0	0
70+	-	-	-	-	-	-	-	0	0
<b>Totals</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>\$175,155</b>

**Average Age** 31.7 years  
**Average Service** 1.3 years  
**Average Pay** \$29,193

Member data for actuarial valuation is as of May 31, 2012.



# Active Members By Attained Age and Years of Service

## Uniformed Patrol

### Closed Plan

Attained Age	Counted by Complete Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30+	No.	Valuation Payroll
Under 20	-	-	-	-	-	-	-	0	\$0
20-24	-	-	-	-	-	-	-	0	0
25-29	-	-	-	-	-	-	-	0	0
30-34	-	-	8	-	-	-	-	8	447,743
35-39	-	-	50	47	-	-	-	97	5,748,006
40-44	1	1	30	190	20	-	-	242	15,794,305
45-49	-	-	9	66	88	22	-	185	13,510,612
50-54	-	-	1	14	31	73	18	137	10,628,133
55-59	-	-	-	2	2	16	29	49	3,939,945
60-64	-	-	-	-	-	-	3	3	274,938
65-69	-	-	-	-	-	-	-	0	0
70+	-	-	-	-	-	-	-	0	0
<b>Totals</b>	<b>1</b>	<b>1</b>	<b>98</b>	<b>319</b>	<b>141</b>	<b>111</b>	<b>50</b>	<b>721</b>	<b>\$50,343,682</b>

**Average Age** 45.5 years  
**Average Service** 20.3 years  
**Average Pay** \$69,825

### Year 2000 Plan

Attained Age	Counted by Complete Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30+	No.	Valuation Payroll
Under 20	-	-	-	-	-	-	-	0	\$0
20-24	11	-	-	-	-	-	-	11	470,127
25-29	96	37	-	-	-	-	-	133	5,988,357
30-34	27	92	14	-	-	-	-	133	6,438,604
35-39	8	54	35	-	-	-	-	97	4,711,396
40-44	4	12	11	-	-	-	-	27	1,268,075
45-49	3	4	3	-	-	-	-	10	472,024
50-54	-	1	-	-	-	-	-	1	51,983
55-59	-	-	1	-	-	-	-	1	49,592
60-64	-	-	-	-	-	-	-	0	0
65-69	-	-	-	-	-	-	-	0	0
70+	-	-	-	-	-	-	-	0	0
<b>Totals</b>	<b>149</b>	<b>200</b>	<b>64</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>413</b>	<b>\$19,450,158</b>

**Average Age** 32.3 years  
**Average Service** 6.7 years  
**Average Pay** \$47,095

Member data for actuarial valuation is as of May 31, 2012.

# Active Members By Attained Age and Years of Service

## Uniformed Patrol

Year 2000 Plan - 2011 Tier

Attained Age	Counted by Complete Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30+	No.	Valuation Payroll
Under 20	-	-	-	-	-	-	-	0	\$ 0
20-24	33	-	-	-	-	-	-	33	1,136,991
25-29	36	-	-	-	-	-	-	36	1,362,555
30-34	8	-	-	-	-	-	-	8	266,884
35-39	3	-	-	-	-	-	-	3	105,781
40-44	1	-	-	-	-	-	-	1	39,938
45-49	-	-	-	-	-	-	-	0	0
50-54	-	-	-	-	-	-	-	0	0
55-59	-	-	-	-	-	-	-	0	0
60-64	-	-	-	-	-	-	-	0	0
65-69	-	-	-	-	-	-	-	0	0
70+	-	-	-	-	-	-	-	0	0
<b>Totals</b>	<b>81</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>81</b>	<b>\$2,912,149</b>

**Average Age** 25.8 years  
**Average Service** 1.0 years  
**Average Pay** \$35,952

Member data for actuarial valuation is as of May 31, 2012.

# Active Members By Attained Age and Years of Service

## Civilian Patrol

### Closed Plan

Attained Age	Counted by Complete Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30+	No.	Valuation Payroll
Under 20	-	-	-	-	-	-	-	0	\$ 0
20-24	-	-	-	-	-	-	-	0	0
25-29	-	-	-	-	-	-	-	0	0
30-34	-	-	5	2	-	-	-	7	226,184
35-39	-	-	20	20	-	-	-	40	1,751,089
40-44	-	2	20	33	15	-	-	70	3,034,986
45-49	-	-	23	40	27	18	3	111	4,762,313
50-54	-	-	19	26	32	36	14	127	5,432,679
55-59	-	-	10	27	14	14	17	82	3,444,580
60-64	-	-	7	15	13	6	12	53	2,230,394
65-69	-	-	-	4	4	-	-	8	312,908
70+	-	-	-	-	1	-	-	1	34,238
<b>Totals</b>	<b>0</b>	<b>2</b>	<b>104</b>	<b>167</b>	<b>106</b>	<b>74</b>	<b>46</b>	<b>499</b>	<b>\$21,229,371</b>

**Average Age** 50.2 years  
**Average Service** 20.6 years  
**Average Pay** \$42,544

### Year 2000 Plan

Attained Age	Counted by Complete Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30+	No.	Valuation Payroll
Under 20	-	-	-	-	-	-	-	0	\$ 0
20-24	7	-	-	-	-	-	-	7	201,108
25-29	56	23	-	-	-	-	-	79	2,797,705
30-34	30	71	14	-	-	-	-	115	4,554,209
35-39	21	23	19	-	-	-	-	63	2,256,186
40-44	23	37	14	-	-	-	-	74	2,486,389
45-49	14	29	14	-	-	-	-	57	2,029,249
50-54	17	25	16	1	-	-	-	59	2,003,543
55-59	13	18	8	-	-	-	-	39	1,221,316
60-64	6	13	9	-	-	-	-	28	915,768
65-69	3	5	5	-	-	-	-	13	401,932
70+	-	3	1	-	-	-	-	4	100,781
<b>Totals</b>	<b>190</b>	<b>247</b>	<b>100</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>538</b>	<b>\$18,968,186</b>

**Average Age** 41.5 years  
**Average Service** 6.6 years  
**Average Pay** \$35,257

Member data for actuarial valuation is as of May 31, 2012.

# Active Members By Attained Age and Years of Service

## Civilian Patrol

Year 2000 Plan - 2011 Tier

Attained Age	Counted by Complete Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30+	No.	Valuation Payroll
Under 20	-	-	-	-	-	-	-	0	\$ 0
20-24	13	-	-	-	-	-	-	13	301,068
25-29	34	-	-	-	-	-	-	34	921,156
30-34	10	-	-	-	-	-	-	10	291,097
35-39	10	-	-	-	-	-	-	10	244,250
40-44	8	-	-	-	-	-	-	8	237,232
45-49	7	-	-	-	-	-	-	7	209,573
50-54	2	-	-	-	-	-	-	2	36,537
55-59	5	-	-	-	-	-	-	5	117,479
60-64	2	-	-	-	-	-	-	2	49,096
65-69	-	-	-	-	-	-	-	0	0
70+	-	-	-	-	-	-	-	0	0
<b>Totals</b>	<b>91</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>91</b>	<b>\$2,407,488</b>

**Average Age** 33.7 years  
**Average Service** 0.9 years  
**Average Pay** \$26,456

Member data for actuarial valuation is as of May 31, 2012.

## Schedule of Active Member Valuation Data

<b>Actuarial Valuation for June 30,</b>	<b>Number of Active Members</b>	<b>Covered Payroll</b>	<b>Average Pay</b>	<b>Percent Change in Average Pay from Prior Year</b>
2003	8,892	\$318,744,192	\$35,846	-0.30%
2004	9,002	328,210,887	36,460	1.70%
2005	9,193	345,695,867	37,604	3.10%
2006	9,033	348,614,699	38,593	2.60%
2007	8,640	360,842,421	41,764	8.20%
2008	8,599	369,424,653	42,961	2.90%
2009	8,784	377,652,245	42,993	0.10%
2010	8,457	369,911,252	43,740	1.70%
2011	8,231	361,639,001	43,936	0.40%
2012	7,458	329,293,168	44,153	<u>0.50%</u>
<b>Ten-Year Average</b>				<b>2.10%</b>

*Member data for actuarial valuation is as of May 31, 2012.*



# Solvency Test

The MPERS funding objective is to meet long term benefit promises through contributions that remain approximately level from year to year as a percent of member payroll. If the contributions to the System are level in concept and soundly executed, the System will **pay all promised benefits when due – the ultimate test of financial soundness.**

**A solvency test** is one means of checking a system's progress under its funding program. In a solvency test for a non-contributory plan, the plan's present assets (cash and investments) are compared with:

1) The liabilities for future benefits to present retired

lives and 2) The liabilities for service already rendered by members. In a system that has been following the discipline of level percent of payroll financing, the liabilities for future benefits to present retired lives (liability 1) will be fully covered by present assets (except in rare circumstances). In addition, the liabilities for service already rendered by members (liability 2) will be partially covered by the remainder of present assets. The larger the funded portion of liability 2, the stronger the condition of the System.

The schedule below illustrates the history of liability 2 of the System.

Valuation Date June 30	(1) Member Contributions	(2) Retirees and Beneficiaries	(3) Active and Inactive Members	Present Valuation Assets	Portion of Present Values Covered by Present Assets			
					(1)	(2)	(3)	Total
-----Millions-----								
1999	0	\$1,132	\$921	\$1,243	100%	100%	12%	61%
2000	0	1,238	951	1,423	100%	100%	19%	65%
2001	0	1,375	926	1,521	100%	100%	16%	66%
2002*	0	1,470	888	1,451	100%	99%	0%	62%
2003	0	1,555	863	1,364	100%	88%	0%	56%
2004	0	1,626	867	1,332	100%	82%	0%	53%
2005	0	1,669	958	1,417	100%	85%	0%	54%
2006	0	1,734	1,007	1,521	100%	88%	0%	56%
2007	0	1,810	1,087	1,686	100%	93%	0%	58%
2008	0	1,873	1,147	1,784	100%	95%	0%	59%
2009	0	1,947	1,166	1,471	100%	76%	0%	47%
2010*	0	2,034	1,225	1,376	100%	68%	0%	42%
2011	0	2,045	1,253	1,427	100%	70%	0%	43%
2012*	0	2,133	1,173	1,531	100%	72%	0%	46%

\* **New assumptions and/or methods adopted.**

# Derivation of Financial Experience

Actual experience will never coincide exactly with assumed experience (except by coincidence). Gains and losses may offset each other over a period of years, but sizeable year-to-year variations from assumed experience are common. Detail on the derivation of the experience gain (loss) is shown below.

UAAL Beginning of Year (at July 1)	\$1,870,299,151
Normal Cost	47,546,183
Contributions	(166,261,417)
Interest	149,402,678
Net Change in LTD Assets	-
Expected UAAL Before Any Changes	1,900,986,595
Effect of Changes in Assumptions & Methods	(18,879,244)
Effect of Adjustment*	-
Expected UAAL After Changes	1,882,107,351
End of Year UAAL (at June 30)	1,775,245,058
Gain/(Loss) for Year	106,862,293
Gain/(Loss) as a Percent of Actuarial Accrued Liabilities at Start of Year (\$3,297.6 million)	3.2%

Valuation Date June 30	Experience Gain (Loss) as % of Beginning Accrued Liability
1999	(7.7)%
2000	(0.1)%
2001	(9.3)%
2002	(4.5)%
2003	(5.2)%
2004	(2.9)%
2005	(1.5)%
2006	1.4%
2007	1.1%
2008	(0.2)%
2009	(12.6)%
2010	(3.8)%
2011	2.2%
2012	3.2%

# Schedule of Retirees and Beneficiaries Added and Removed

Valuation Date	Added to Rolls		Removed from Rolls		Rolls End of Year		Average Annual Allowances	% Increase	
	Number	Annual Allowances	Number	Annual Allowances	Number	Annual Allowances		in Annual Allowance	in Average Annual Allowance
FY2012									
Retirees	413	\$5,988,784	171	\$2,119,116	6,013	\$165,042,751	\$27,448	4.10%	-0.09%
Beneficiaries	130	1,206,259	105	610,931	1,880	\$28,166,374	14,966	5.20%	3.69%
Disabilities	34	0	25	16,712	175	\$922,027	5,239	0.39%	-5.31%
FY2011									
Retirees	311	\$3,955,409	146	\$2,406,006	5,771	\$158,543,113	\$27,472	0.74%	-2.14%
Beneficiaries	102	891,718	109	710,880	1,855	26,772,995	14,433	-1.17%	-0.79%
Disabilities	38	0	14	10,399	166	918,403	5,533	1.69%	-13.00%
FY2010									
Retirees	272	\$3,218,890	137	\$3,252,182	5,606	\$157,380,575	\$28,074	3.29%	0.80%
Beneficiaries	103	930,442	104	625,292	1,862	27,089,491	14,549	5.79%	5.85%
Disabilities	21	0	25	73,638	142	903,107	6,360	-40.95%	-39.29%
FY2009									
Retirees	292	\$4,125,644	178	\$2,136,578	5,471	\$152,372,034	\$27,851	4.49%	2.31%
Beneficiaries	138	1,134,755	108	622,167	1,863	25,606,266	13,745	7.80%	6.07%
Disabilities	19	0	28	71,381	146	1,529,412	10,475	-11.67%	-6.23%
FY2008									
Retirees	331	\$3,940,198	151	\$1,202,185	5,357	\$145,826,691	\$27,222	4.97%	1.45%
Beneficiaries	113	763,176	92	437,560	1,833	23,753,030	12,959	6.59%	5.37%
Disabilities	21	54,465	32	57,913	155	1,731,521	11,171	-22.63%	-17.14%
FY2007									
Retirees	310	\$3,052,533	157	\$1,373,300	5,177	\$138,917,326	\$26,834	4.87%	1.77%
Beneficiaries	131	51,253	112	617,163	1,812	22,283,555	12,298	8.09%	6.96%
Disabilities	36	0	24	116,307	166	2,237,892	13,481	38.31%	28.31%
FY2006									
Retirees	252	\$3,005,557	166	\$1,477,199	5,024	\$132,465,613	\$26,367	3.89%	1.74%
Beneficiaries	106	715,154	75	381,966	1,793	20,615,839	11,498	7.09%	5.24%
Disabilities	22	170,138	22	106,561	154	1,618,075	10,507	9.70%	8.99%
FY2005									
Retirees	202	\$4,685,700	125	\$2,373,810	4,920	\$127,508,904	\$25,916	3.53%	1.91%
Beneficiaries	106	1,527,938	79	618,487	1,762	19,251,121	10,926	7.95%	6.29%
Disabilities	7	95,296	7	47,561	153	1,474,983	9,640	-1.86%	-1.86%
FY2004									
Retirees	295	\$7,389,209	143	\$2,239,625	4,843	\$123,159,002	\$25,430	5.95%	2.62%
Beneficiaries	114	1,423,712	89	557,685	1,735	17,833,685	10,279	7.64%	6.08%
Disabilities	9	87,586	11	36,938	153	1,502,868	9,823	-19.77%	-18.72%
FY2003									
Retirees	249	\$6,319,872	101	\$2,062,469	4,691	\$116,243,532	\$24,780	6.24%	2.89%
Beneficiaries	121	1,627,820	91	650,474	1,710	16,568,589	9,689	9.58%	7.66%
Disabilities	20	180,624	22	43,088	155	1,873,102	12,085	36.86%	38.62%

\*New disabilities are covered / paid by the Standard Insurance Co.  
Data of this chart is as of June 30, 2012.

# Summary of Plan Provisions \*

## Comparison of the Closed Plan, the Year 2000 Plan, and the Year 2000 Plan - 2011 Tier For the Year Ended June 30, 2012

Plan Provision	Closed Plan	Year 2000 Plan	Year 2000 Plan - 2011 Tier
<b>Membership Eligibility</b>	<ul style="list-style-type: none"> <li>Members who work in a position normally requiring at least 1,040 hours of work a year.</li> </ul>	<ul style="list-style-type: none"> <li>Members hired for the first time on or after July 1, 2000, in a position normally requiring at least 1,040 hours of work a year.</li> <li>Members who left state employment prior to becoming vested and return to work on or after July 1, 2000, in a position normally requiring at least 1,040 hours of work a year.</li> </ul>	<ul style="list-style-type: none"> <li>Members hired for the first time on or after January 1, 2011, in a position normally requiring at least 1,040 hours of work a year.</li> <li>Members who have never worked for a state agency covered by MPERS or MOSERS prior to January 1, 2011.</li> </ul>
<b>Normal Retirement Eligibility</b>	<ul style="list-style-type: none"> <li>Age 65 &amp; active with 4 years of service.</li> <li>Age 65 with 5 years of service.</li> <li>Age 60 with 15 years of service.</li> <li>"Rule of 80"/minimum age 48.</li> </ul> <p><u>Uniformed Members Only:</u></p> <ul style="list-style-type: none"> <li>Age 55 &amp; active with 4 years of service.</li> <li>Age 55 with 5 years of service.</li> <li>"Rule of 80"/minimum age 48.</li> <li>Age 60 &amp; active – mandatory, no minimum service.</li> </ul>	<ul style="list-style-type: none"> <li>Age 62 with 5 years of service.</li> <li>"Rule of 80"/minimum age 48.</li> </ul> <p><u>Uniformed Members Only:</u></p> <ul style="list-style-type: none"> <li>"Rule of 80"/minimum age 48.</li> <li>Age 60 &amp; active - mandatory with 5 years of service.</li> </ul>	<ul style="list-style-type: none"> <li>Age 67 with 10 years of service.</li> <li>"Rule of 90"/minimum age 55.</li> </ul> <p><u>Uniformed Members Only:</u></p> <ul style="list-style-type: none"> <li>Age 55 &amp; active with 10 years of service.</li> <li>Age 60 &amp; active - mandatory, no minimum service.</li> </ul>
<b>Early (Reduced) Retirement Eligibility</b>	<ul style="list-style-type: none"> <li>Age 55 with 10 years creditable service.</li> </ul>	<ul style="list-style-type: none"> <li>Age 57 with 5 years creditable service.</li> </ul>	<ul style="list-style-type: none"> <li>Age 62 with 10 years of creditable service. (active only)</li> </ul>
<b>Benefit</b>			
Life Benefit	1.6% x FAP** x service (Base benefit is increased by 33 1/3% for uniformed patrol members only.)	1.7% x FAP** x service	1.7% x FAP** x service
Temporary Benefit	Not available.	0.8% x FAP** x service Until age 62, only if retiring under "Rule of 80". <u>Uniformed Members Only:</u> Until age 62, if retiring under "Rule of 80" or at mandatory age 60.	0.8% x FAP** x service Until age 62, only if retiring under "Rule of 90". <u>Uniformed Members Only:</u> Until age 62, if retiring under either normal retirement eligibility provision.
<b>Vesting</b>	5 years of service.	5 years of service.	10 years of service.
<b>COLA</b> (Cost-of-Living Allowance)	<ul style="list-style-type: none"> <li>If hired before August 28, 1997, annual COLA is a minimum of 4%, maximum 5%, based on 80% of the increase in the CPI-U over the previous year, up to a maximum of 65% of original benefit.</li> <li>After 65% cap is reached, annual COLA increase will be equal to 80% of the change in the CPI-U, with a maximum of 5%.</li> <li>If hired on or after August 28, 1997, annual COLA is equal to 80% of the change in the CPI-U with a maximum rate of 5%.</li> </ul>	<ul style="list-style-type: none"> <li>Annual COLA is equal to 80% of the change in the CPI-U with a maximum rate of 5%.</li> </ul>	<ul style="list-style-type: none"> <li>Annual COLA is equal to 80% of the change in the CPI-U with a maximum rate of 5%.</li> </ul>

# Summary of Plan Provisions \*

## Comparison of the Closed Plan, the Year 2000 Plan, and the Year 2000 Plan - 2011 Tier For the Year Ended June 30, 2012

Plan Provision	Closed Plan	Year 2000 Plan	Year 2000 Plan - 2011 Tier
<b>Survivor Benefit</b> (Death before retirement) Non Duty-Related Death	<ul style="list-style-type: none"> <li>Survivor benefit to eligible spouse calculated using the Joint &amp; 100% survivor option or 80% of the member's life income annuity paid to eligible children under age 21.</li> <li>If at least 3, but less than 5, years of service the survivor benefit is calculated using 25% of the member's base benefit calculated as if the member retired on their date of death.</li> </ul>	<ul style="list-style-type: none"> <li>Survivor benefit to eligible spouse calculated using the Joint &amp; 100% survivor option or 80% of the member's life income annuity paid to eligible children under age 21.</li> </ul>	<ul style="list-style-type: none"> <li>Survivor benefit to eligible spouse calculated using the Joint &amp; 100% survivor option or 80% of the member's life income annuity paid to eligible children under age 21.</li> </ul>
Duty-Related Death	<ul style="list-style-type: none"> <li>Survivor benefit to eligible spouse or children no less than 50% of final average pay (no minimum service requirement).</li> </ul>	<ul style="list-style-type: none"> <li>Survivor benefit to eligible spouse or children no less than 50% of final average pay (no minimum service requirement).</li> </ul>	<ul style="list-style-type: none"> <li>Survivor benefit to eligible spouse or children no less than 50% of final average pay (no minimum service requirement).</li> </ul>
<b>Optional Forms of Payment</b>	Payment options include: <ul style="list-style-type: none"> <li>Life Income Annuity</li> <li>Unreduced Joint &amp; 50% Survivor</li> <li>Joint &amp; 100% Survivor</li> <li>60 or 120 Guaranteed Payments</li> <li>BackDROP</li> </ul>	Payment options include: <ul style="list-style-type: none"> <li>Life Income Annuity</li> <li>Joint &amp; 50% Survivor</li> <li>Joint &amp; 100% Survivor</li> <li>120 or 180 Guaranteed Payments</li> <li>BackDROP</li> </ul>	Payment options include: <ul style="list-style-type: none"> <li>Life Income Annuity</li> <li>Joint &amp; 50% Survivor</li> <li>Joint &amp; 100% Survivor</li> <li>120 or 180 Guaranteed Payments</li> </ul>
<b>Disability</b>	Long-Term Disability and Work-Related Disability	Long-Term Disability and Work-Related Disability	Long-Term Disability and Work-Related Disability
<b>Employee Contributions</b>	Non-contributory	Non-contributory	4% of Gross Pay

*\*This summary describes the plan provisions of the Revised Statutes of Missouri (RSMo), as amended, that governed the programs, which MPERS administered during the period covered by this report. It does not overrule any applicable statute or administrative rule and, in the event of a conflict, the applicable statute or rule would apply. The Year 2000 Plan was effective July 1, 2000 and the Year 2000 Plan – 2011 Tier was effective January 1, 2011. A complete summary is available at the MPERS office.*

*\*\*Final Average Pay – average of highest 36 consecutive months of pay.*



# Legislative Changes

On July 10, 2012, Governor Jay Nixon signed into law HCS for SCS for Senate Bill 625 (SB625), which contained the following provisions:

## **Transfer of Funds with Reciprocal Service**

The legislation relates to the transfer of service and assets between the MoDOT and Patrol Employees' Retirement System (MPERS) and the Missouri State Employees' Retirement System (MOSERS). Prior to August 28, 2011, service transfers between MPERS and MOSERS involved only transfers of service credit. That is, the receiving system took on the liability for any transferred service without receiving the accompanying assets.

During the 2011 legislative session, SS/SCS/HB282 (HB282) was signed into law allowing the transfer of funds to cover the liability associated with the service credit transfer. However, HB282 did not anticipate those employees who previously transferred from one system to the other (prior to HB282) and are now transferring back (after HB282). SB625 modifies the computation of accrued benefits to exclude

amounts for previously transferred service not subject to asset transfer.

Senate Bill 625 excludes service transferred prior to September 1, 2011, from the computation of the accrued liability. In addition, if any assets were transferred after August 28, 2011, for service that was transferred prior to that date, the receiving system would be required to return the assets transferred to the sending system.

## **Employee Contribution Interest Rate**

Changes to Section 104.1091.8(5) modifies the annual interest rate paid on employee contributions for members of the 2011 Tier, effective June 30, 2014. Instead of a flat 4% annually, the interest crediting rate shall be equal to the investment rate that is published by the United States Department of Treasury, or its successor agency, for 52-week treasury bills for the relevant auction that is nearest to the preceding July 1st, or a successor treasury bill investment as approved by the Board if the 52-week treasury bill is no longer issued.

# Notes





Reduces Elder  
Economic Hardships



# STATISTICAL SUMMARY

## **Changes in Net Assets**

The chart on page 66 details a 10-year history of the additions (revenues) and deductions (expenses) of MPERS.

The chart on page 67 details a 10-year history of benefit payments by type.

## **Plan Membership**

Overall, MPERS' membership decreased by 13. Retired members and their beneficiaries increased by 182, terminated-vested members increased by 65, and active members decreased by 260.

The charts beginning on page 68 detail the number of retired members by type of benefit and the average monthly benefit payments.

Other charts and graphs in this section detail demographic information concerning our members and employers.

All non-accounting data in this section was derived from internal sources and the annual actuarial valuation reports. Member data may differ between some schedules since the valuations are performed using data as of May 31 each year.

# Changes in Net Assets

## MoDOT and Patrol Employees' Retirement System Changes in Net Assets, Last Ten Fiscal Years

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
<b><u>Additions</u></b>										
Employer Contributions	\$ 76,806,313	\$ 86,724,914	\$102,240,145	\$111,271,679	\$121,264,532	\$123,335,151	\$122,599,301	\$124,052,534	\$150,022,169	\$164,880,140
Employee Contributions <sup>(1)</sup>	0	0	0	0	0	0	0	0	45,361	202,843
Transfers from Other Systems <sup>(2)</sup>	0	174,140	0	0	0	0	0	0	17,609,276	264,954
Other Contributions	2,584,257	668,525	364,680	271,038	529,926	1,192,527	444,000	424,172	453,984	908,898
Net Investment Income	36,526,003	180,910,907	144,641,068	212,206,238	283,549,424	(42,915,886)	(426,265,311)	166,307,054	279,612,052	42,091,564
Other Income	0	33,851	31,104	41,542	31,580	31,546	33,571	33,145	33,141	13,760
<b>Total Additions to Plan Net Assets</b>	115,916,573	268,512,337	247,276,997	323,790,497	405,375,462	81,643,338	(303,188,439)	290,816,905	447,775,983	208,362,159
<b><u>Deductions</u></b>										
Benefit Payments	144,334,345	154,987,027	157,742,337	164,997,406	175,970,479	185,801,362	192,013,250	196,721,274	202,153,768	219,704,320
Administrative Expenses	1,451,855	1,639,133	1,916,592	1,927,594	2,120,764	2,371,215	2,339,501	2,512,181	2,658,849	2,934,969
<b>Total Deductions from Plan Net Assets</b>	145,786,200	156,626,160	159,658,929	166,925,000	178,091,243	188,172,577	194,352,751	199,233,455	204,812,617	222,639,289
<b>Change in Net Assets</b>	<b>\$(29,869,627)</b>	<b>\$111,886,177</b>	<b>\$87,618,068</b>	<b>\$156,865,497</b>	<b>\$227,284,219</b>	<b>\$(106,529,239)</b>	<b>\$(497,541,190)</b>	<b>\$91,583,450</b>	<b>\$242,963,366</b>	<b>\$(14,277,130)</b>

(1) Employee contributions began January 1, 2011 for members in the Year 2000 Plan - 2011 Tier.

(2) 2004 transfer from MOSERS for Highway Safety employees and 2011 transfer from MOSERS for Water Patrol employees.



# Benefit Payments By Type

## MoDOT and Patrol Employees' Retirement System Benefit Payments by Type, Last Ten Fiscal Years

Type of Benefit	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
<b><u>Age and Service Benefits:</u></b>										
Retiree and Survivor Annuity Payments	\$131,689,970	\$138,767,316	\$145,118,809	\$151,647,091	\$159,145,368	\$167,654,271	\$175,588,494	\$183,103,253	\$188,171,369	\$195,964,396
BackDROP Payments	11,696,862	14,318,622	8,880,770	9,721,059	13,177,432	14,631,932	12,859,452	10,358,181	10,792,932	18,138,891
<b><u>Disability Benefits:</u></b>										
Long-Term Disability	537,513	555,434	475,948	386,026	288,908	223,501	179,239	137,624	101,875	85,240
Work-Related Disability <sup>(1)</sup>	0	633,299	718,248	747,723	703,159	728,507	692,043	664,469	648,320	668,821
Normal Disability <sup>(1)</sup>	0	302,356	295,776	244,208	220,490	207,417	186,349	163,485	167,427	166,140
Insured Disability <sup>(2)</sup>	0	0	1,837,786	1,796,299	1,905,122	1,835,734	1,847,673	1,759,262	1,696,845	1,592,517
<b><u>Death Benefits</u></b>	410,000	410,000	415,000	455,000	530,000	520,000	660,000	535,000	575,000	675,000
<b><u>Service Transfer Payments</u></b> <sup>(4)</sup>	0	0	0	0	0	0	0	0	0	2,410,526
<b><u>Employee Contribution Refunds</u></b> <sup>(3)</sup>	0	0	0	0	0	0	0	0	0	2,789
<b>Total Benefits</b>	\$144,334,345	\$154,987,027	\$157,742,337	\$164,997,406	\$175,970,479	\$185,801,362	\$192,013,250	\$196,721,274	\$202,153,768	\$219,704,320

(1) Prior to FY04, work-related and normal disabilities were reported as retiree benefits.

(2) Outsourced LTD program began 07/01/04.

(3) Employee contributions began January 1, 2011 for members in the Year 2000 Plan - 2011 Tier.

(4) Reciprocal transfer legislation enacted effective August 28, 2011.

# Schedule of Retired Members By Type of Benefit

## All Members\*

Amount of Monthly Benefit	Type of Benefit					Survivor	Total Recipients
	Retirement		Disability				
	Normal	Early	Normal	Work-Related	Long-Term		
1 - 200	18	63	4	26	83	140	334
201 - 400	137	140	3	0	7	232	519
401 - 600	144	127	1	1	7	225	505
601 - 800	144	67	3	1	1	214	430
801 - 1000	194	43	2	1	1	165	406
1001 - 1200	238	21	2	2	0	142	405
1201 - 1400	340	12	2	2	1	106	463
1401 - 1600	317	6	2	3	0	94	422
1601 - 1800	382	1	0	5	0	73	461
1801 - 2000	372	4	0	5	0	70	451
2001 - 2200	310	3	0	4	0	73	390
2201 - 2400	350	1	0	1	0	52	404
2401 - 2600	341	1	0	1	0	44	387
2601 - 2800	304	0	0	2	0	53	359
2801 - 3000	262	1	0	0	0	36	299
> 3000	1,670	0	0	2	0	161	1,833
TOTALS	5,523	490	19	56	100	1,880	8,068

\* This chart includes seven retirement system staff retirees

## MoDOT

Amount of Monthly Benefit	Type of Benefit					Survivor	Total Recipients
	Retirement		Disability				
	Normal	Early	Normal	Work-Related	Long-Term		
1 - 200	14	44	4	24	71	131	288
201 - 400	104	117	3	0	7	215	446
401 - 600	105	107	1	1	5	197	416
601 - 800	103	60	3	1	1	189	357
801 - 1000	150	36	2	1	1	145	335
1001 - 1200	199	19	2	2	0	126	348
1201 - 1400	293	11	2	2	1	86	395
1401 - 1600	279	6	2	3	0	69	359
1601 - 1800	330	1	0	5	0	62	398
1801 - 2000	310	4	0	3	0	60	377
2001 - 2200	267	3	0	2	0	47	319
2201 - 2400	291	1	0	1	0	35	328
2401 - 2600	295	1	0	1	0	26	323
2601 - 2800	267	0	0	2	0	33	302
2801 - 3000	236	1	0	0	0	28	265
> 3000	977	0	0	1	0	124	1,102
TOTALS	4,220	411	19	49	86	1,573	6,358

# Schedule of Retired Members By Type of Benefit

## Uniformed Patrol

Amount of Monthly Benefit	Type of Benefit						Total Recipients
	Retirement		Disability			Survivor	
	Normal	Early	Normal	Work-Related	Long-Term		
1 - 200	0	0	0	1	1	1	3
201 - 400	0	0	0	0	0	2	2
401 - 600	11	0	0	0	0	7	18
601 - 800	11	0	0	0	0	6	17
801 - 1000	4	0	0	0	0	4	8
1001 - 1200	6	0	0	0	0	4	10
1201 - 1400	1	0	0	0	0	7	8
1401 - 1600	2	0	0	0	0	14	16
1601 - 1800	2	0	0	0	0	4	6
1801 - 2000	3	0	0	1	0	8	12
2001 - 2200	5	0	0	1	0	20	26
2201 - 2400	3	0	0	0	0	16	19
2401 - 2600	3	0	0	0	0	17	20
2601 - 2800	1	0	0	0	0	17	18
2801 - 3000	6	0	0	0	0	7	13
> 3000	602	0	0	1	0	34	637
TOTALS	660	0	0	4	1	168	833

## Civilian Patrol

Amount of Monthly Benefit	Type of Benefit					Survivor	Total Recipients
	Retirement		Disability				
	Normal	Early	Normal	Work-Related	Long-Term		
1 - 200	3	19	0	1	11	8	42
201 - 400	33	23	0	0	0	15	71
401 - 600	28	20	0	0	2	21	71
601 - 800	30	7	0	0	0	19	56
801 - 1000	40	7	0	0	0	16	63
1001 - 1200	32	2	0	0	0	12	46
1201 - 1400	46	1	0	0	0	13	60
1401 - 1600	36	0	0	0	0	11	47
1601 - 1800	50	0	0	0	0	7	57
1801 - 2000	59	0	0	1	0	2	62
2001 - 2200	38	0	0	1	0	6	45
2201 - 2400	56	0	0	0	0	1	57
2401 - 2600	43	0	0	0	0	1	44
2601 - 2800	36	0	0	0	0	3	39
2801 - 3000	19	0	0	0	0	1	20
> 3000	87	0	0	0	0	3	90
TOTALS	636	79	0	3	13	139	870

# Schedule of Average Monthly Benefit Payments

## MoDOT

### By Years of Service

Retired In Fiscal Year		0 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35	36 - 40	41 +
<b>2003</b>	<b>Average Benefit</b>	<b>\$382</b>	<b>536</b>	<b>794</b>	<b>1,171</b>	<b>2,023</b>	<b>2,429</b>	<b>2,590</b>	<b>3,561</b>
2003	Average FAP	\$2,122	1,757	1,827	2,374	2,955	3,358	3,712	3,796
<b>2003</b>	<b>Current Retirees</b>	<b>13</b>	<b>8</b>	<b>10</b>	<b>20</b>	<b>45</b>	<b>36</b>	<b>29</b>	<b>14</b>
<b>2004</b>	<b>Average Benefit</b>	<b>\$376</b>	<b>640</b>	<b>1,096</b>	<b>1,229</b>	<b>2,039</b>	<b>2,488</b>	<b>2,423</b>	<b>3,713</b>
2004	Average FAP	\$3,034	2,512	2,816	2,564	2,883	3,536	3,689	4,707
<b>2004</b>	<b>Current Retirees</b>	<b>10</b>	<b>15</b>	<b>19</b>	<b>23</b>	<b>63</b>	<b>58</b>	<b>25</b>	<b>8</b>
<b>2005</b>	<b>Average Benefit</b>	<b>\$424</b>	<b>479</b>	<b>834</b>	<b>1,196</b>	<b>2,213</b>	<b>2,307</b>	<b>2,670</b>	<b>3,490</b>
2005	Average FAP	\$2,902	1,951	2,589	2,675	3,390	3,304	3,988	4,106
<b>2005</b>	<b>Current Retirees</b>	<b>10</b>	<b>18</b>	<b>18</b>	<b>9</b>	<b>49</b>	<b>22</b>	<b>19</b>	<b>6</b>
<b>2006</b>	<b>Average Benefit</b>	<b>\$370</b>	<b>634</b>	<b>911</b>	<b>1,271</b>	<b>2,350</b>	<b>2,453</b>	<b>3,045</b>	<b>3,510</b>
2006	Average FAP	\$3,109	2,396	2,748	2,929	3,378	3,362	4,093	4,086
<b>2006</b>	<b>Current Retirees</b>	<b>13</b>	<b>15</b>	<b>16</b>	<b>24</b>	<b>57</b>	<b>31</b>	<b>10</b>	<b>7</b>
<b>2007</b>	<b>Average Benefit</b>	<b>\$285</b>	<b>533</b>	<b>812</b>	<b>1,360</b>	<b>2,418</b>	<b>2,812</b>	<b>3,000</b>	<b>3,214</b>
2007	Average FAP	\$2,139	2,414	2,357	2,932	3,352	3,664	3,970	3,938
<b>2007</b>	<b>Current Retirees</b>	<b>22</b>	<b>24</b>	<b>21</b>	<b>30</b>	<b>66</b>	<b>37</b>	<b>15</b>	<b>7</b>
<b>2008</b>	<b>Average Benefit</b>	<b>\$277</b>	<b>476</b>	<b>922</b>	<b>1,659</b>	<b>2,397</b>	<b>3,051</b>	<b>2,372</b>	<b>3,257</b>
2008	Average FAP	\$2,261	2,386	2,995	3,404	3,435	3,926	3,513	4,463
<b>2008</b>	<b>Current Retirees</b>	<b>30</b>	<b>29</b>	<b>26</b>	<b>36</b>	<b>57</b>	<b>51</b>	<b>18</b>	<b>5</b>
<b>2009</b>	<b>Average Benefit</b>	<b>\$308</b>	<b>614</b>	<b>1,009</b>	<b>1,812</b>	<b>2,384</b>	<b>2,837</b>	<b>3,169</b>	<b>3,337</b>
2009	Average FAP	\$2,545	2,926	3,472	3,493	3,537	3,697	3,920	4,539
<b>2009</b>	<b>Current Retirees</b>	<b>28</b>	<b>17</b>	<b>15</b>	<b>41</b>	<b>43</b>	<b>46</b>	<b>16</b>	<b>5</b>
<b>2010</b>	<b>Average Benefit</b>	<b>\$287</b>	<b>814</b>	<b>1,080</b>	<b>1,734</b>	<b>2,496</b>	<b>3,018</b>	<b>2,844</b>	<b>3,107</b>
2010	Average FAP	\$2,388	2,726	3,335	3,525	3,622	3,961	4,015	4,008
<b>2010</b>	<b>Current Retirees</b>	<b>26</b>	<b>26</b>	<b>17</b>	<b>37</b>	<b>62</b>	<b>38</b>	<b>3</b>	<b>3</b>
<b>2011</b>	<b>Average Benefit</b>	<b>\$680</b>	<b>647</b>	<b>1,014</b>	<b>1,851</b>	<b>2,730</b>	<b>3,103</b>	<b>3,096</b>	<b>3,632</b>
2011	Average FAP	\$2,851	2,691	3,144	3,590	3,931	3,950	3,863	4,167
<b>2011</b>	<b>Current Retirees</b>	<b>26</b>	<b>36</b>	<b>26</b>	<b>40</b>	<b>63</b>	<b>35</b>	<b>6</b>	<b>3</b>
<b>2012</b>	<b>Average Benefit</b>	<b>\$513</b>	<b>792</b>	<b>1,005</b>	<b>1,844</b>	<b>2,798</b>	<b>3,244</b>	<b>2,979</b>	<b>0</b>
2012	Average FAP	\$2,950	3,002	3,499	3,535	4,221	4,288	4,179	0
<b>2012</b>	<b>Current Retirees</b>	<b>43</b>	<b>29</b>	<b>37</b>	<b>58</b>	<b>105</b>	<b>55</b>	<b>5</b>	<b>0</b>

FAP = Final Average Pay

# Schedule of Average Monthly Benefit Payments

## Uniformed Patrol

### By Years of Service

Retired In Fiscal Year		0-10	11-15	16-20	21-25	26-30	31-35	36-40	41+
<b>2003</b>	<b>Average Benefit</b>	<b>\$417</b>	<b>577</b>	<b>0</b>	<b>0</b>	<b>4,194</b>	<b>5,309</b>	<b>5,127</b>	<b>0</b>
2003	Average FAP	\$1,051	1,514	0	0	4,415	5,247	4,929	0
<b>2003</b>	<b>Current Retirees</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>6</b>	<b>7</b>	<b>0</b>
<b>2004</b>	<b>Average Benefit</b>	<b>\$688</b>	<b>480</b>	<b>1,745</b>	<b>0</b>	<b>3,837</b>	<b>4,679</b>	<b>5,012</b>	<b>5,644</b>
2004	Average FAP	\$2,295	992	3,000	0	4,372	4,844	5,068	5,078
<b>2004</b>	<b>Current Retirees</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>8</b>	<b>8</b>	<b>5</b>	<b>1</b>
<b>2005</b>	<b>Average Benefit</b>	<b>\$0</b>	<b>734</b>	<b>1,500</b>	<b>2,974</b>	<b>4,080</b>	<b>4,263</b>	<b>5,882</b>	<b>6,267</b>
2005	Average FAP	\$0	2,386	2,772	3,870	4,965	4,856	5,362	5,158
<b>2005</b>	<b>Current Retirees</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>4</b>	<b>6</b>	<b>4</b>	<b>1</b>
<b>2006</b>	<b>Average Benefit</b>	<b>\$465</b>	<b>0</b>	<b>1,526</b>	<b>0</b>	<b>3,769</b>	<b>4,588</b>	<b>5,218</b>	<b>0</b>
2006	Average FAP	\$1,628	0	3,007	0	4,884	5,214	5,004	0
<b>2006</b>	<b>Current Retirees</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>6</b>	<b>10</b>	<b>1</b>	<b>0</b>
<b>2007</b>	<b>Average Benefit</b>	<b>\$620</b>	<b>786</b>	<b>1,039</b>	<b>0</b>	<b>3,836</b>	<b>5,025</b>	<b>5,625</b>	<b>0</b>
2007	Average FAP	\$2,292	2,260	2,475	0	5,287	5,684	5,514	0
<b>2007</b>	<b>Current Retirees</b>	<b>1</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>5</b>	<b>12</b>	<b>5</b>	<b>0</b>
<b>2008</b>	<b>Average Benefit</b>	<b>\$504</b>	<b>0</b>	<b>1,932</b>	<b>0</b>	<b>4,471</b>	<b>4,578</b>	<b>5,130</b>	<b>0</b>
2008	Average FAP	\$1,898	0	3,969	0	6,098	5,253	5,575	0
<b>2008</b>	<b>Current Retirees</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>5</b>	<b>10</b>	<b>3</b>	<b>0</b>
<b>2009</b>	<b>Average Benefit</b>	<b>\$0</b>	<b>750</b>	<b>0</b>	<b>2,123</b>	<b>4,410</b>	<b>4,560</b>	<b>5,002</b>	<b>6,252</b>
2009	Average FAP	\$0	2,557	0	3,711	6,140	5,741	5,565	5,974
<b>2009</b>	<b>Current Retirees</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>6</b>	<b>16</b>	<b>6</b>	<b>1</b>
<b>2010</b>	<b>Average Benefit</b>	<b>\$0</b>	<b>913</b>	<b>1,250</b>	<b>0</b>	<b>4,078</b>	<b>5,439</b>	<b>6,639</b>	<b>0</b>
2010	Average FAP	\$0	2,749	3,072	0	5,625	6,619	7,410	0
<b>2010</b>	<b>Current Retirees</b>	<b>0</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>7</b>	<b>9</b>	<b>1</b>	<b>0</b>
<b>2011</b>	<b>Average Benefit</b>	<b>\$510</b>	<b>928</b>	<b>0</b>	<b>2,363</b>	<b>4,235</b>	<b>5,181</b>	<b>6,276</b>	<b>0</b>
2011	Average FAP	\$2,245	3,051	0	4,595	6,117	6,389	6,746	0
<b>2011</b>	<b>Current Retirees</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>10</b>	<b>7</b>	<b>1</b>	<b>0</b>
<b>2012</b>	<b>Average Benefit</b>	<b>\$0</b>	<b>582</b>	<b>0</b>	<b>2,507</b>	<b>4,051</b>	<b>5,015</b>	<b>0</b>	<b>0</b>
2012	Average FAP	\$0	2,463	0	4,521	6,065	6,439	0	0
<b>2012</b>	<b>Current Retirees</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>10</b>	<b>17</b>	<b>0</b>	<b>0</b>

FAP = Final Average Pay



# Schedule of Average Monthly Benefit Payments

## Civilian Patrol

### By Years of Service

Retired In Fiscal Year		0-10	11-15	16-20	21-25	26-30	31-35	36-40	41+
<b>2003</b>	<b>Average Benefit</b>	<b>\$448</b>	<b>507</b>	<b>783</b>	<b>1,102</b>	<b>2,060</b>	<b>1,904</b>	<b>2,183</b>	<b>2,373</b>
2003	Average FAP	\$2,221	1,405	2,425	2,490	2,746	2,855	3,611	3,001
<b>2003</b>	<b>Current Retirees</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>9</b>	<b>15</b>	<b>3</b>	<b>3</b>
<b>2004</b>	<b>Average Benefit</b>	<b>\$262</b>	<b>468</b>	<b>660</b>	<b>1,231</b>	<b>1,806</b>	<b>2,319</b>	<b>2,327</b>	<b>3,646</b>
2004	Average FAP	\$1,985	2,055	2,025	2,353	2,768	3,057	3,440	5,259
<b>2004</b>	<b>Current Retirees</b>	<b>2</b>	<b>4</b>	<b>2</b>	<b>4</b>	<b>10</b>	<b>7</b>	<b>6</b>	<b>1</b>
<b>2005</b>	<b>Average Benefit</b>	<b>\$257</b>	<b>436</b>	<b>785</b>	<b>1,104</b>	<b>2,722</b>	<b>3,670</b>	<b>2,006</b>	<b>3,831</b>
2005	Average FAP	\$1,298	1,841	2,240	1,780	3,285	4,044	2,522	4,422
<b>2005</b>	<b>Current Retirees</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>5</b>	<b>7</b>	<b>8</b>	<b>1</b>	<b>1</b>
<b>2006</b>	<b>Average Benefit</b>	<b>\$177</b>	<b>495</b>	<b>683</b>	<b>1,097</b>	<b>2,530</b>	<b>2,533</b>	<b>2,846</b>	<b>0</b>
2006	Average FAP	\$2,080	2,066	2,003	2,537	3,343	3,439	3,235	0
<b>2006</b>	<b>Current Retirees</b>	<b>4</b>	<b>5</b>	<b>2</b>	<b>11</b>	<b>7</b>	<b>12</b>	<b>2</b>	<b>0</b>
<b>2007</b>	<b>Average Benefit</b>	<b>\$300</b>	<b>503</b>	<b>581</b>	<b>1,199</b>	<b>2,365</b>	<b>2,603</b>	<b>2,567</b>	<b>0</b>
2007	Average FAP	\$1,853	1,924	2,082	2,491	3,600	3,023	2,868	0
<b>2007</b>	<b>Current Retirees</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>6</b>	<b>8</b>	<b>13</b>	<b>2</b>	<b>0</b>
<b>2008</b>	<b>Average Benefit</b>	<b>\$250</b>	<b>552</b>	<b>811</b>	<b>1,099</b>	<b>1,849</b>	<b>2,819</b>	<b>3,906</b>	<b>0</b>
2008	Average FAP	\$2,186	2,609	2,551	2,658	2,753	3,756	4,151	0
<b>2008</b>	<b>Current Retirees</b>	<b>6</b>	<b>7</b>	<b>7</b>	<b>5</b>	<b>8</b>	<b>12</b>	<b>1</b>	<b>0</b>
<b>2009</b>	<b>Average Benefit</b>	<b>\$251</b>	<b>353</b>	<b>573</b>	<b>0</b>	<b>2,552</b>	<b>2,593</b>	<b>2,261</b>	<b>2,211</b>
2009	Average FAP	\$2,206	1,874	2,135	0	3,690	3,333	2,865	2,679
<b>2009</b>	<b>Current Retirees</b>	<b>5</b>	<b>6</b>	<b>3</b>	<b>0</b>	<b>11</b>	<b>9</b>	<b>3</b>	<b>2</b>
<b>2010</b>	<b>Average Benefit</b>	<b>\$378</b>	<b>884</b>	<b>920</b>	<b>1,194</b>	<b>3,183</b>	<b>2,489</b>	<b>4,140</b>	<b>0</b>
2010	Average FAP	\$2,506	2,437	2,795	2,625	4,289	3,188	5,179	0
<b>2010</b>	<b>Current Retirees</b>	<b>9</b>	<b>4</b>	<b>4</b>	<b>8</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>0</b>
<b>2011</b>	<b>Average Benefit</b>	<b>\$595</b>	<b>542</b>	<b>776</b>	<b>2,099</b>	<b>2,629</b>	<b>2,716</b>	<b>0</b>	<b>0</b>
2011	Average FAP	\$2,550	2,269	2,561	3,676	4,190	3,843	0	0
<b>2011</b>	<b>Current Retirees</b>	<b>6</b>	<b>8</b>	<b>7</b>	<b>11</b>	<b>12</b>	<b>8</b>	<b>0</b>	<b>0</b>
<b>2012</b>	<b>Average Benefit</b>	<b>\$593</b>	<b>662</b>	<b>1,084</b>	<b>1,879</b>	<b>2,417</b>	<b>2,787</b>	<b>0</b>	<b>0</b>
2012	Average FAP	\$2,522	2,307	3,404	3,095	3,710	3,712	0	0
<b>2012</b>	<b>Current Retirees</b>	<b>10</b>	<b>7</b>	<b>5</b>	<b>10</b>	<b>13</b>	<b>4</b>	<b>0</b>	<b>0</b>

FAP = Final Average Pay

# Schedule of Average Monthly Benefit Payments

## MPERS

### By Years of Service

Retired In Fiscal Year		0-10	11-15	16-20	21-25	26-30	31-35	36-40	41+
<b>2003</b>	<b>Average Benefit</b>	<b>\$0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2,882</b>	<b>0</b>	<b>0</b>	<b>0</b>
2003	Average FAP	\$0	0	0	0	3,232	0	0	0
<b>2003</b>	<b>Current Retirees</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>2006</b>	<b>Average Benefit</b>	<b>\$0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3,445</b>	<b>0</b>	<b>0</b>
2006	Average FAP	\$0	0	0	0	0	4,178	0	0
<b>2006</b>	<b>Current Retirees</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>
<b>2007</b>	<b>Average Benefit</b>	<b>\$0</b>	<b>0</b>	<b>1,108</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
2007	Average FAP	\$0	0	3,081	0	0	0	0	0
<b>2007</b>	<b>Current Retirees</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>2009</b>	<b>Average Benefit</b>	<b>\$0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4,486</b>	<b>0</b>	<b>7,460</b>
2009	Average FAP	\$0	0	0	0	0	5,922	0	9,989
<b>2009</b>	<b>Current Retirees</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>
<b>2012</b>	<b>Average Benefit</b>	<b>\$0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4,564</b>	<b>0</b>	<b>0</b>	<b>0</b>
2012	Average FAP	\$0	0	0	0	7,087	0	0	0
<b>2012</b>	<b>Current Retirees</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>

Note: There were no retirements during the years not shown above.

FAP = Final Average Pay

## Active Member Data

### Schedule of Participating Employers

	MoDOT		Patrol		MPERS		Total	
	Employees	%	Employees	%	Employees	%	Employees	%
2003	6,716	75.50	2,169	24.39	10	0.11	8,895	100
2004	6,848	76.07	2,143	23.81	11	0.12	9,002	100
2005	6,980	76.15	2,174	23.72	12	0.13	9,166	100
2006	6,839	75.91	2,159	23.96	12	0.13	9,010	100
2007	6,459	74.76	2,168	25.10	12	0.14	8,639	100
2008	6,376	74.30	2,192	25.55	13	0.15	8,581	100
2009	6,601	74.90	2,199	24.95	13	0.15	8,813	100
2010	6,164	73.21	2,243	26.64	13	0.15	8,420	100
2011	5,796	71.03	2,350	28.80	14	0.17	8,160	100
2012	5,093	68.42	2,337	31.39	14	0.19	7,444	100

Data for this chart is as of June 30, 2012.

# Active Member Data

## For the Year Ended June 30, 2012

### By Age

Age	Total	Closed Plan			
		MoDOT	Civilian Patrol	Uniformed Patrol	MPERS
< 21	0	0	0	0	0
21 - 25	0	0	0	0	0
26 - 30	1	1	0	0	0
31 - 35	154	118	16	19	1
36 - 40	523	317	46	158	2
41 - 45	876	556	83	235	2
46 - 50	1,031	734	123	174	0
51 - 55	861	644	112	102	3
56 - 60	424	315	79	30	0
61 - 65	134	100	34	0	0
66+	15	11	4	0	0
<b>Total</b>	<b>4,019</b>	<b>2,796</b>	<b>497</b>	<b>718</b>	<b>8</b>
<b>Average Age</b>		<b>48</b>	<b>49</b>	<b>44</b>	<b>45</b>

### Year 2000 Plan

Age	Total	MoDOT	Civilian Patrol	Uniformed Patrol	MPERS
< 21	1	1	0	0	0
21 - 25	143	75	20	48	0
26 - 30	583	352	96	134	1
31 - 35	676	440	104	132	0
36 - 40	486	348	63	73	2
41 - 45	393	305	68	19	1
46 - 50	355	290	59	5	1
51 - 55	313	259	53	1	0
56 - 60	189	149	39	1	0
61 - 65	69	46	23	0	0
66+	19	8	11	0	0
<b>Total</b>	<b>3,227</b>	<b>2,273</b>	<b>536</b>	<b>413</b>	<b>5</b>
<b>Average Age</b>		<b>40</b>	<b>40</b>	<b>31</b>	<b>39</b>

### Year 2000 Plan - 2011 Tier

Age	Total	MoDOT	Civilian Patrol	Uniformed Patrol	MPERS
< 21	0	0	0	0	0
21 - 25	89	4	28	56	1
26 - 30	41	1	23	17	0
31 - 35	19	1	11	7	0
36 - 40	16	6	9	1	0
41 - 45	12	4	8	0	0
46 - 50	8	4	4	0	0
51 - 55	7	2	5	0	0
56 - 60	6	2	4	0	0
61 - 65	0	0	0	0	0
66+	0	0	0	0	0
<b>Total</b>	<b>198</b>	<b>24</b>	<b>92</b>	<b>81</b>	<b>1</b>
<b>Average Age</b>		<b>40</b>	<b>33</b>	<b>25</b>	<b>25</b>

# Active Member Data

## For the Year Ended June 30, 2012

### By Years of Service

Years of Service	Closed Plan				
	Total	MoDOT	Civilian Patrol	Uniformed Patrol	MPERS
< 01	0	0	0	0	0
01 - 05	1	0	0	1	0
06 - 10	9	6	2	1	0
11 - 15	1,086	773	141	170	2
16 - 20	1,318	888	150	277	3
21 - 25	805	550	106	148	1
26 - 30	615	475	66	74	0
31 - 35	147	81	25	39	2
36 - 40	32	19	5	8	0
41 - 45	5	3	2	0	0
46+	1	1	0	0	0
<b>Total</b>	<b>4,019</b>	<b>2,796</b>	<b>497</b>	<b>718</b>	<b>8</b>
<b>Average Service</b>		<b>20</b>	<b>20</b>	<b>20</b>	<b>22</b>

Year 2000 Plan					
Years of Service	Total	MoDOT	Civilian Patrol	Uniformed Patrol	MPERS
< 01	35	21	10	4	0
01 - 05	1,291	875	235	178	3
06 - 10	1,485	1,060	238	185	2
11 - 15	411	312	53	46	0
16 - 20	3	3	0	0	0
21 - 25	2	2	0	0	0
26 - 30	0	0	0	0	0
31 - 35	0	0	0	0	0
36 - 40	0	0	0	0	0
41 - 45	0	0	0	0	0
46+	0	0	0	0	0
<b>Total</b>	<b>3,227</b>	<b>2,273</b>	<b>536</b>	<b>413</b>	<b>5</b>
<b>Average Service</b>		<b>7</b>	<b>6</b>	<b>6</b>	<b>6</b>

Year 2000 Plan - 2011 Tier					
Years of Service	Total	MoDOT	Civilian Patrol	Uniformed Patrol	MPERS
< 01	97	18	56	22	1
01 - 05	101	6	36	59	0
06 - 10	0	0	0	0	0
11 - 15	0	0	0	0	0
16 - 20	0	0	0	0	0
21 - 25	0	0	0	0	0
26 - 30	0	0	0	0	0
31 - 35	0	0	0	0	0
36 - 40	0	0	0	0	0
41 - 45	0	0	0	0	0
46+	0	0	0	0	0
<b>Total</b>	<b>198</b>	<b>24</b>	<b>92</b>	<b>81</b>	<b>1</b>
<b>Average Service</b>		<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>

# Terminated Vested Member Data

## For the Year Ended June 30, 2012

### By Age

Age	Total	Closed Plan			
		MoDOT	Civilian Patrol	Uniformed Patrol	MPERS
< 21	0	0	0	0	0
21 - 25	0	0	0	0	0
26 - 30	1	1	0	0	0
31 - 35	58	41	12	4	1
36 - 40	219	172	23	24	0
41 - 45	372	266	39	67	0
46 - 50	443	361	43	39	0
51 - 55	366	309	45	12	0
56 - 60	149	130	19	0	0
61 - 65	23	18	5	0	0
66+	0	0	0	0	0
<b>Total</b>	<b>1,631</b>	<b>1,298</b>	<b>186</b>	<b>146</b>	<b>1</b>
<b>Average Age</b>	<b>0</b>	<b>47</b>	<b>47</b>	<b>44</b>	<b>35</b>

### Year 2000 Plan

Age	Total	MoDOT	Civilian Patrol	Uniformed Patrol	MPERS
< 21	0	0	0	0	0
21 - 25	0	0	0	0	0
26 - 30	51	39	10	1	1
31 - 35	96	81	7	8	0
36 - 40	97	88	6	3	0
41 - 45	63	56	6	1	0
46 - 50	56	49	6	1	0
51 - 55	32	30	2	0	0
56 - 60	12	11	1	0	0
61 - 65	0	0	0	0	0
66+	0	0	0	0	0
<b>Total</b>	<b>407</b>	<b>354</b>	<b>38</b>	<b>14</b>	<b>1</b>
<b>Average Age</b>	<b>0</b>	<b>39</b>	<b>38</b>	<b>35</b>	<b>30</b>

### Year 2000 Plan - 2011 Tier

Age	Total	MoDOT	Civilian Patrol	Uniformed Patrol	MPERS
< 21	0	0	0	0	0
21 - 25	0	0	0	0	0
26 - 30	0	0	0	0	0
31 - 35	0	0	0	0	0
36 - 40	0	0	0	0	0
41 - 45	0	0	0	0	0
46 - 50	0	0	0	0	0
51 - 55	0	0	0	0	0
56 - 60	0	0	0	0	0
61 - 65	0	0	0	0	0
66+	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Average Age</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>



# Terminated Vested Member Data

For the Year Ended June 30, 2012

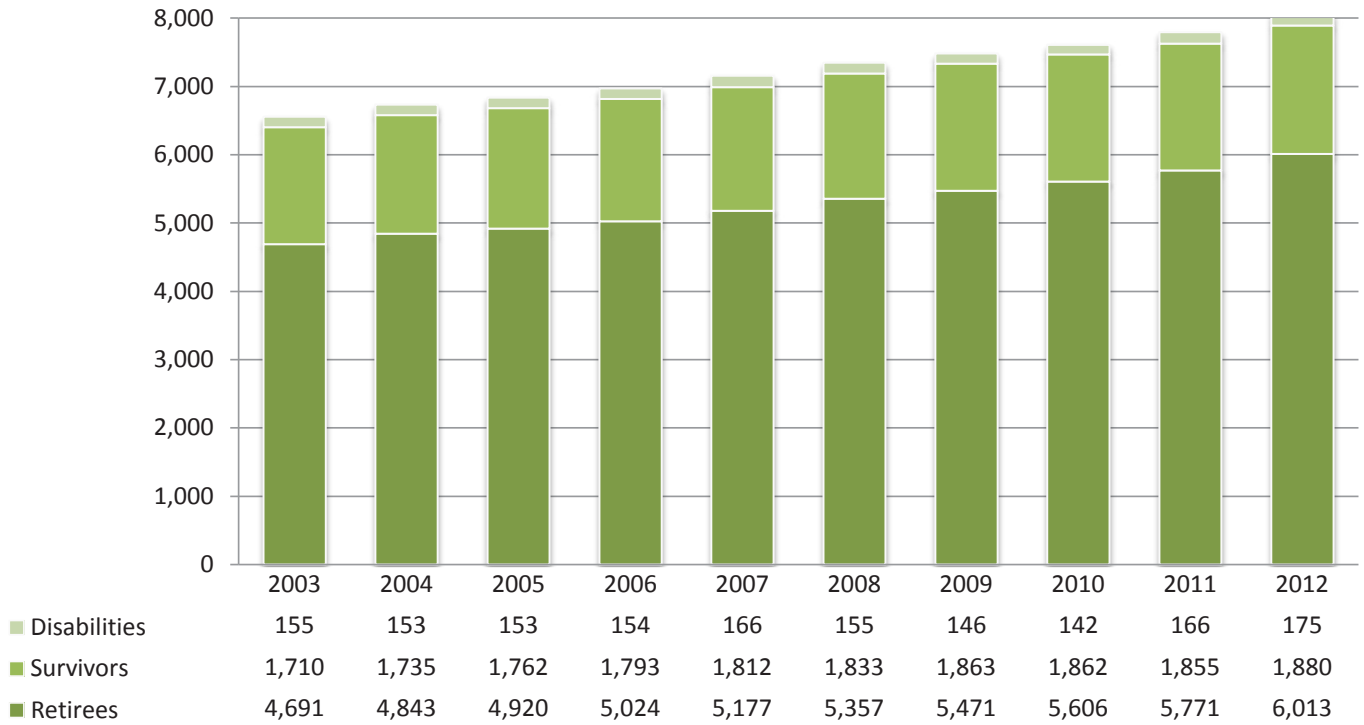
## By Years of Service

Years of Service	Closed Plan				
	Total	MoDOT	Civilian Patrol	Uniformed Patrol	MPERS
< 01	4	2	1	1	0
01 - 05	217	162	29	26	0
06 - 10	759	594	83	81	1
11 - 15	419	336	54	29	0
16 - 20	166	146	12	8	0
21 - 25	57	50	6	1	0
26 - 30	9	8	1	0	0
31 - 35	0	0	0	0	0
36 - 40	0	0	0	0	0
41 - 45	0	0	0	0	0
46+	0	0	0	0	0
<b>Total</b>	<b>1,631</b>	<b>1,298</b>	<b>186</b>	<b>146</b>	<b>1</b>
<b>Average Service</b>		<b>11</b>	<b>10</b>	<b>9</b>	<b>8</b>

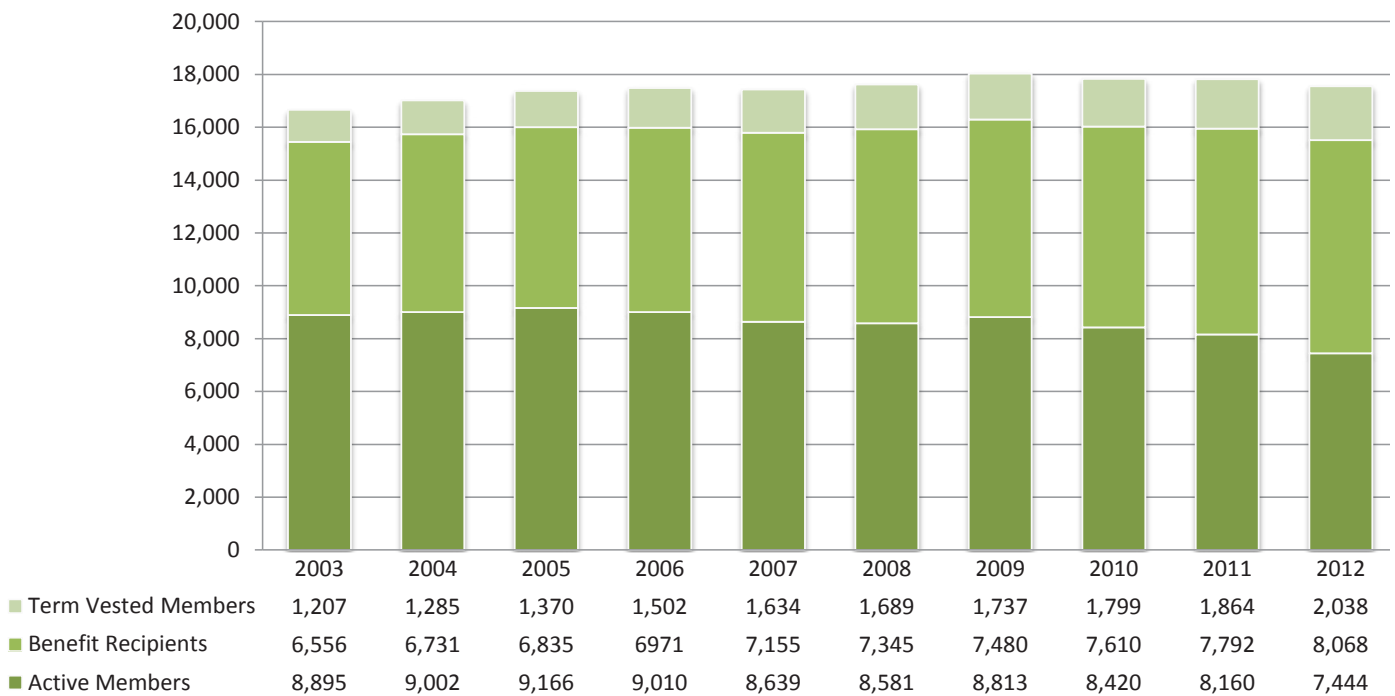
Year 2000 Plan					
Years of Service	Total	MoDOT	Civilian Patrol	Uniformed Patrol	MPERS
< 01	2	1	1	0	0
01 - 05	109	91	16	1	1
06 - 10	284	250	21	13	0
11 - 15	11	11	0	0	0
16 - 20	1	1	0	0	0
21 - 25	0	0	0	0	0
26 - 30	0	0	0	0	0
31 - 35	0	0	0	0	0
36 - 40	0	0	0	0	0
41 - 45	0	0	0	0	0
46+	0	0	0	0	0
<b>Total</b>	<b>407</b>	<b>354</b>	<b>38</b>	<b>14</b>	<b>1</b>
<b>Average Service</b>		<b>7</b>	<b>6</b>	<b>8</b>	<b>5</b>

Year 2000 Plan - 2011 Tier					
Years of Service	Total	MoDOT	Civilian Patrol	Uniformed Patrol	MPERS
< 01	0	0	0	0	0
01 - 05	0	0	0	0	0
06 - 10	0	0	0	0	0
11 - 15	0	0	0	0	0
16 - 20	0	0	0	0	0
21 - 25	0	0	0	0	0
26 - 30	0	0	0	0	0
31 - 35	0	0	0	0	0
36 - 40	0	0	0	0	0
41 - 45	0	0	0	0	0
46+	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Average Service</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

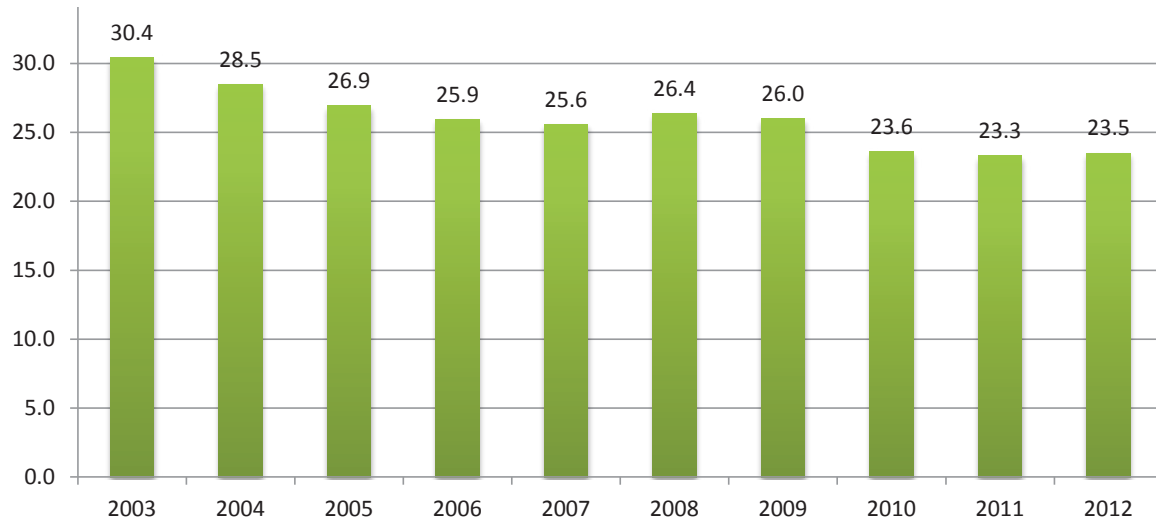
## Benefit Recipients



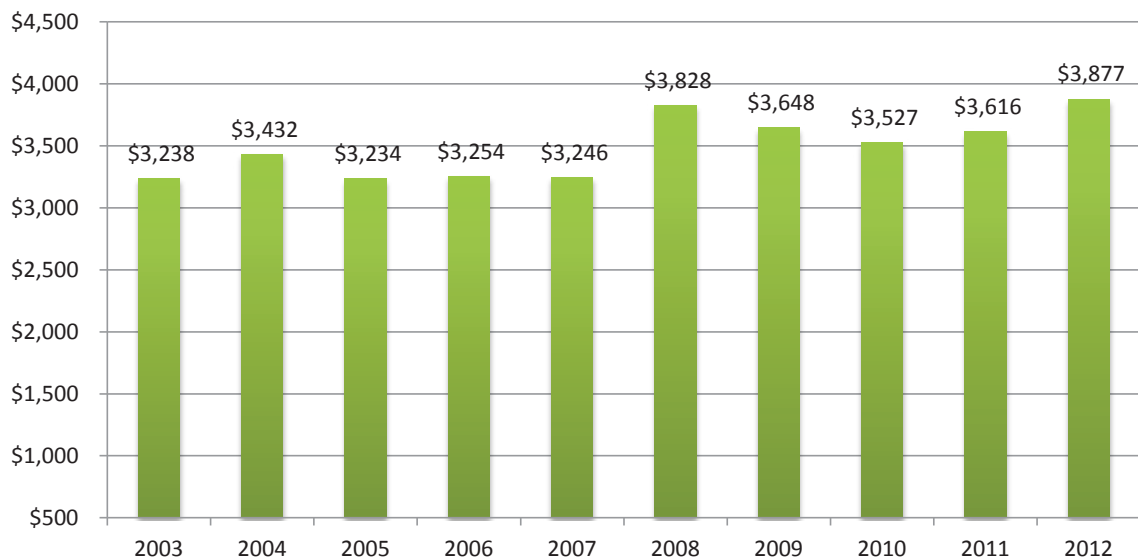
## Membership Distribution



## Average Years of Service for New Retirees



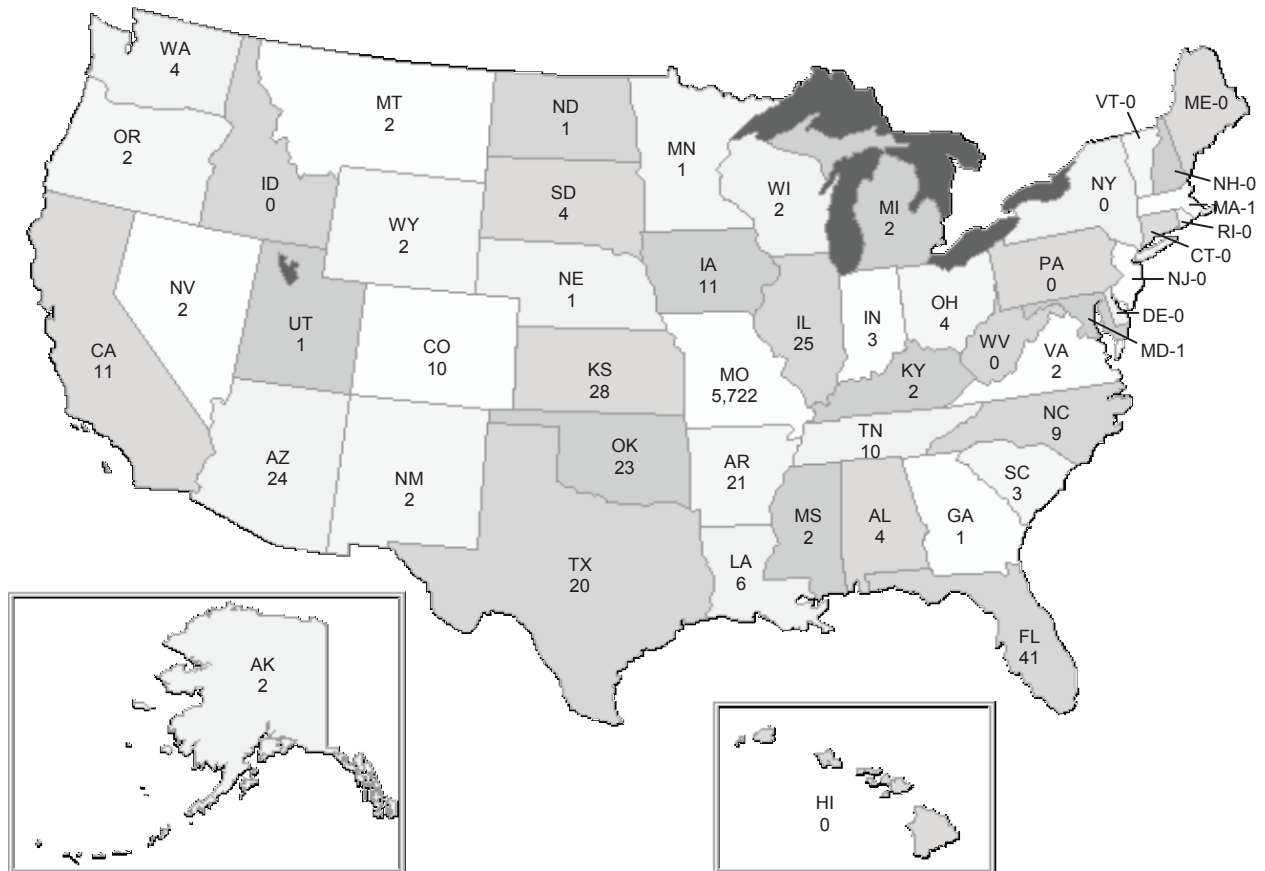
## Final Average Pay for New Retirees



# Location of MPERS Retirees

For the Year Ended June 30, 2012

This map represents the demographic distribution of retirees by state.



1 Retiree resides in England